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**ABSTRACT**

This guidebook consists of two main parts: a user's guide for training teachers in nutrition; and the educational materials to be used in the training program. The object of this guidebook is to increase the knowledge and competence of inservice elementary and secondary teachers in nutrition education. Sections in the user's guide describe three interrelated ways to use the guide: for self instruction, for leaders of one- to three-day teacher workshops, and to train workshop leaders to use the program. Appendices to the user's guide provide knowledge and attitude pre- and posttests, answers to the tests given in the program, an annotated list of audiovisual materials, transparency masters, workshop evaluation forms, and a script for a slide-tape presentation. The educational materials for the program are organized into three sections, followed by a general annotated bibliography. The first section treats factors influencing nutrition attitudes, problems, and assessment. The second section provides information on nutrients and the relationships of food and nutrition to growth and development. In the third section, a variety of educational methodologies, strategies, and techniques are introduced. Each section is preceded by a list of the concepts and objectives to be addressed. The general annotated bibliography provides references for the first two sections and lists resource addresses and materials. (FG)

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# TRANSPORTABLE TEACHER TRAINING PROGRAM IN NUTRITION

PRE-SCHOOL - GRADE 12

developed by

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\* USER'S GUIDE \*  
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FOR  
TRANSPORTABLE TEACHER TRAINING PROGRAM  
IN NUTRITION

PRE-SCHOOL - GRADE 12

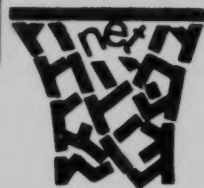
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## USER'S GUIDE

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# indiana nutrition and education training program

Ball State University / 150 Practical Arts Building / Muncie, Indiana 47306

February 26, 1980

## An Open Letter to Teachers:

We all know that basketball is one of the favorite sports of our students. How would you like to make the studying of nutrition concepts one of the favorite subjects of your students? It can be done! That's right, you can make nutrition both interesting and challenging. Are you ready to present this challenge to your students? Will you feel comfortable and competent teaching nutrition information? Do you feel that you can recognize nutrition related problems that your students might have? Are you aware of the different materials and methods available to teach nutrition?

If you cannot answer yes to all of these questions, we hope we can help you. Contained in this packet are materials developed especially for teachers from pre-school through grade twelve. The material can be used independently or in a group. The materials can be used in parts or in total to best meet your needs. For further direction on how to use these materials, refer to the User's Guide.

We hope that you will find these materials helpful as we all work to improve the nutritional status of our young people.

Project Staff,  
Teacher Training Program in  
Nutrition

USER'S GUIDE  
for  
TEACHER TRAINING PROGRAM IN NUTRITION

Introduction

This user's guide is designed to direct individuals on how to use the materials developed for the Teacher Training Program in Nutrition. The guide is divided into three parts:

- I. Guide for Self-Instructional use of the Teacher Training Program in Nutrition
- II. Guide for Workshop Leaders using the Teacher Training Program in Nutrition
- III. Guide for Training Workshop Leaders to use the Teacher Training Program in Nutrition

Specific directions for use of the materials in the Teacher Training Program in Nutrition are found in each of the three parts. Determine the method by which you are using the materials and turn to that part for suggested directions or use.

Symbols

As a guide to the user of the materials in the Teacher Training Program in Nutrition, pictorial symbols have been used. These symbols are designed to direct the user of these materials through the various activities. The symbols indicate six different educative processes. These include THINK, READ, DO EVALUATE, APPLY and RESOURCES. An explanation of each symbol is given.



①

The use of this symbol asks the user to think about what has been read, done, or is to be done. You will also find this symbol used to indicate an objective which you are to accomplish.



②

Using the idea of an open book, this symbol is an invitation to read the material to get specific information. The read symbol is used on much of the material since it includes factual information.



③

The use of the pad and pencil illustrates the need for activity. The activities included in the materials are those which will help the user to better understand and comprehend the factual information.



④

After one completes any activity the first question one usually asks is . . . how well did things go? This calls for evaluation--be it self-evaluation or evaluation by another individual. The symbol is used when the user is asked to stop and evaluate the work that s/he has completed.



You will notice that dissemination of information to others is the focus of this symbol. Although the apply symbol is not used frequently in this program, it is used when suggestions are made on how the information you have gained can be used with your students.



This symbol is used to indicate the resources used in the preparation of these materials.

### Testing

Before proceeding on with the materials, you should stop and take the two pre-tests. One is a Nutrition/Education Test and the other an Attitude Test. This should help you identify areas in which you might want to do further study.

----- STOP -----

Take the Nutrition/Education Test (Appendix A, pp. UG 41-44 ) and complete the Pre-Post Attitude Inventory on Nutrition (Appendix B, pp. UG 47-48). Use any computer answer sheet to record your answers.

----- CONTINUE -----

Put the answer sheet for the Nutrition/Education Pre-Test and the Attitude Inventory aside. Keep both instruments so you can make comparisons at the conclusion of your work with these materials. There are not right and wrong answers on the attitude inventory.



## PART I

### Self-Instructional Use of the Teacher Training Program in Nutrition

If you are using the Teacher Training Program in Nutrition as self-instructional materials, please examine the entire packet quickly before you start to work with them. Note that there are three sections which can be used independently or as a total program. The three sections are:

- I. Attitudes, Problems, and Assessment.
- II. Nutrition Information.
- III. Educational Methodologies.

You may only need to work on those areas in which you feel least confident. Before using any of these sections, please study and become familiar with the symbols used throughout the program. These were shown and explained in the introduction to the User's Guide (page UG2 and UG3).

Although you may be working on this alone, you might find it helpful to ask another teacher that teaches at about the same grade level as you, to work through this program at the same time you do, and to talk with you periodically to share reactions and ideas. This "buddy system" may help you keep moving along and give you someone to brainstorm with about ways of incorporating the information into your classroom.

Try to find a regular period when you can use a block of uninterrupted time to work with the program. Select the sections of the Teacher Training



Program in Nutrition that you wish to study and follow the more specific directions for their use.

### DIRECTIONS FOR USING SECTION I: ATTITUDES, PROBLEMS, AND ASSESSMENT.

This section contains information on the various factors which influence attitudes about food and food related problems. Information is also included on how to identify various problems related to food and nutrition. A number of assessment instruments are found in this section.

As you complete each item, you can check it off in the blank provided.

- \_\_\_ 1. Read the page giving the concepts and objectives for this section.
- \_\_\_ 2. Study pages 3 to 18 entitled Food Attitudes and Behaviors. Complete the questions on pages 5 and 6. If possible, compare your responses with one or more other teachers who have also completed these questions. What does this tell you about how your food habits were formed?  
  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- \_\_\_ 3. Try to identify cultural or ethnic foods by completing the checklist on pages 11-13. Check your answers in Appendix E, page UG 61-62.
- \_\_\_ 4. A number of audio-visuals are available for this section. (A complete annotated list of audio-visuals used in these materials is found in Appendix F of the User's Guide, page UG 63. Some that you might like to use are:  
  
"I Like What I Eat Regardless" (filmstrip in the Foods, Fads, and Fallacies Series), Jr/Sr High.  
  
"Let's Eat Food" (film - 35 min.), Jr/Sr High.

4. (Continued)

"Food Preferences" (filmstrip in the Lunchroom Learning Series), Teachers.

American Ethnic Foods Series - (includes six filmstrips on Chinese, German, Italian, Mexican, Native North American, and Soul Food, Jr/Sr High.

- \_\_\_ 5. Read the section entitled Nutrition Problems on pages 19-27. This section is presented in a question/answer format.

- \_\_\_ 6. Pay particular attention to the suggested activities that you might do to determine if any of these nutrition related problems exist. A thorough discussion of assessment follows in the next section.

- \_\_\_ 7. A number of audio-visuals are available for this section. Some that you might like to use are:

"Food for Life" (film - 22 min.), Jr/Sr High.

"Nutrition and Malnutrition" (filmstrip - 11 min., in the Good Sense and Good Food Series ) Jr/Sr High.

Food to Live On: Nutrition from the 20's through the 90's Series contains three filmstrips:

"The Independent Twenties"

"The Changing Forties"

"The Maturing Years" - Jr/Sr High.

"Is There a Perfect Diet" (filmstrip), Jr/Sr High.

"Nutrition: The World" (filmstrip), Jr/Sr High.

- \_\_\_ 8. Books in addition to those listed on pages 28 of the Teacher Training Program in Nutrition, that you might like to use include:

Lappe, F. M. *Diet for a Small Planet*, Ballantine Books, Inc., New York, 1973.

Deutsch, R. M. *The New Nuts Among the Berries*, Bull Publishing Co., Palo Alto, California, 1977.

- \_\_\_ 9. Read the section entitled "Nutritional Status--Assessment" pages 29-69.

- \_\_\_ 10. You might want to take note of the eight physical signs of good nutrition on pages 29-30.

- \_\_\_ 11. Study the information about Standards of Dietary Adequacy on pages 37-41. Find and underline your own needs on the table of Recommended Dietary Allowances on these pages. Using the same table, find and underline the RDA for your students.
- \_\_\_ 12. Keep a 3-day record of the foods you eat following the directions and using the forms provided on pages 47-51. Record the nutritive content of the foods you ate, using the charts in the back of a reliable up-to-date nutrition book such as *Nutrition Concepts and Controversies* by E. M. Hamilton and E. Whitney.
- \_\_\_ 13. If you wish to have your students keep a record of food eaten you might use as is or modify one of the assessment devices found on pages 53-55. If you find nutrient shortages, common to many of them, plan some lessons to encourage them to eat more foods rich in these nutrients.
- \_\_\_ 14. To better study your community to learn more about nutrition problems, food habits, and/or sources of nutrition information, you might want to work through the learning module, Developing Social Surveys, on pages 71-116.
- \_\_\_ 15. One way to assess nutrition related problems is through observation. Suggested guidelines for making observations are found on pages 117-125.
- \_\_\_ 16. Using Sample I Observation Form on page 121 view the film "Food for Life." Record your responses in the space provided.
- \_\_\_ 17. Using Sample II Observation Form on pages 123-125 you might want to make repeated observations on your students, particularly those whom you feel might have a nutrition related problem.
- \_\_\_ 18. If you are working with students who have reached puberty, arrange to view and hear the slide tape series entitled Nutritional Concerns and Considerations in Pregnancy and Lactation. If you do not work with this age group, you might want to view the series because of the helpful information it contains. (The narration is found on pages 127-144).
- \_\_\_ 19. This completes Section I. If you wish more information, study one or more of the references listed in the Related Annotated Bibliography on pages 149-159.

## DIRECTIONS FOR USING SECTION II: NUTRITION

This section provides an introduction to the nutrients. This program addresses only a couple of the vitamins and minerals. Those covered are vitamin A and ascorbic acid, calcium and iron. These four were selected because they have been found to be most often lacking in our diets.

As you complete each item, you can check it off in the blank provided.

- \_\_\_ 1. Read page 161 outlining the concepts and objectives found in this section.
- \_\_\_ 2. View the slide-tape series entitled Nutrition Introduction and/or read the section on pages UG 113-125.
- \_\_\_ 3. A number of audio-visuals are available that present general nutrition information. Some that you might like to use for your own enrichment or with your students include:  
  
    "Nutrition: The Individual" in the Look and Cook Nutrition Series (filmstrip) Jr/Sr High.  
  
    "Professor Whacko's Incredible Pill" (filmstrip), Grades 1-3.
- \_\_\_ 4. View the slide/tape series on the introduction to vitamins on pages UG 119-123. In this program all vitamins are not covered in detail. Only those identified as being lacking in the American diets are covered. These are vitamin A and ascorbic acid. To get other vitamin information, you might consult one of the references listed on page 168 and 173.
- \_\_\_ 5. To study vitamin A, complete the programmed instruction on pages 175-182.
- \_\_\_ 6. To study ascorbic acid, read through the question/answer section on pages 185-192.
- \_\_\_ 7. You will find a suggested activity related to the study of ascorbic acid that you might like to use in your classroom. This is found on page 193.
- \_\_\_ 8. You might view the film, "Sugar Cereal Imitation Orange Breakfast." This film is suitable for any age level above the third grade.



- \_\_\_ 9. View the slide-tape series entitled "Minerals" and/or read the section on introduction to minerals on pages UG 124-125 and 195-196.
- \_\_\_ 10. To study calcium and phosphorous, complete the programmed instruction on pages 197-205.
- \_\_\_ 11. To study iron, read through the question/answer section on pages 207-212.
- \_\_\_ 12. For additional information on these and other nutrients, you might like to view some of the following:
  - "Chemistry of Foods" Good Sense and Good Food Series, (filmstrip), Jr/Sr High.
  - "Feeling Fine--Foods to Grow By" (filmstrip), Primary grades.
  - "Bread: A Slice of Life" (filmstrip), Primary grades.
  - Look and Cook--Nutrition Series, particularly, "Nutrition: The Individual" (filmstrip), Jr/Sr High.
- \_\_\_ 13. Additional readings may be found in the Annotated Bibliography on nutrition information found on pages 215-222.

### DIRECTIONS FOR USING SECTION III: EDUCATIONAL METHODOLOGIES

This section includes several topics which could help the teacher in the classroom. These topics may be studied and used as you feel the need. It is recognized that many of you have had training in educational methodologies, but to some of you perhaps some of the strategies will either be new or use a different approach. As you go through this section, check off each item you complete in the blank provided.

- \_\_\_ 1. Read page 223 outlining the concepts and objectives found in this section.



- \_\_\_ 2. Read and study the section on organization structure of the classroom on pages 225-239. There are a couple of charts suggesting activities that could be used in teaching nutrition in the teacher centered or pupil centered classroom.
- \_\_\_ 3. Complete the learning module entitled "Develop a Nutrition Project." This module includes the forms and suggestions for writing objectives and developing a lesson plan which is used in some of the other modules. This module is found on 241.
- \_\_\_ 4. Complete the learning module entitled "Resource Persons" found on pages 247-278. This module has several ideas on how to plan for and carry out the plans for utilizing a resource person in the classroom.
- \_\_\_ 5. Complete the learning module entitled "Field Trips" found on pages 279-312. This module contains a number of suggestions of nutrition-related field trips as well as a guide on planning, doing and evaluating field trips.
- \_\_\_ 6. Complete the learning module entitled "Community Service Project" found on pages 313-332. The module presents a plan whereby an older student volunteers to become involved in teaching nutrition information to younger students. This teaching is an excellent means for these older students to learn while doing.
- \_\_\_ 7. Complete the learning module entitled "Involving Parents." The module which suggests some different ways of getting parents involved in the teaching of nutrition is found on pages 333-364.
- \_\_\_ 8. Read and study the next section on "Involving the School Food Service" on pages 365-372. This section suggests several ways in which you as a classroom teacher can make use of the food service personnel in your school.
- \_\_\_ 9. View the Lunchroom Learning Series to gain ideas on how to use the lunchroom in your teaching.

Filmstrip titles included are:

"InVolve<sup>ment</sup>"  
"Food Preferences"  
"Nutrient Source and Function"  
"Team Effort"

These filmstrips are designed for use by teachers.

- \_\_\_ 10. Read, study and use the part entitled "Choosing Teaching Materials" on pages 373-376. This will help you determine the worth of some of the materials available to Teachers.
- \_\_\_ 11. Study the section on "Gaming as a Teaching Technique" on pages 377-392. In addition to the information, a couple of easy to make games are suggested. You might check to see what other nutrition games you can find. A couple of suggestions of such games are found on pages 385-388.
- \_\_\_ 12. This next part contains some student activities involving food preparation which could be set up in the classroom. Activities such as these are a good way to try to get parent involvement. Study these activities to see if they could be used in your classroom. This can be found on pages 393-400.
- \_\_\_ 13. A lot of information is written on nutrition and published each year. As an individual who is attempting to keep up to date on nutrition information, you have to know how to evaluate the articles as they appear. Find an article on a nutrition topic and evaluate the article according to the given criteria. This is found on pages 401-406.
- \_\_\_ 14. The last part of this section is a scope and sequence chart showing the nutrition topics as they occur in the state adopted elementary health, junior and senior high school health and science textbooks, and the home economics curriculum guides. These are found on pages 407-420 and are arranged by grade levels so that you can study the concepts taught at your level. For preschool and kindergarten, the Dairy Council materials were used to identify topics.
- \_\_\_ 15. Using the form and completed Sample found on pages 423-425, select a topic you would be teaching and develop an overall plan for teaching this concept.

----- STOP -----

- \_\_\_ 16. Take the Nutrition/Education Post Test (Appendix C, page UG 49-52) and Pre-Post Attitude Inventory on Nutrition Test (Appendix D, page UG 55-58).
- \_\_\_ 17. Continue by scoring your test. The answer sheet for the Nutrition/Education Test is found in Appendix G, page UG 73 of the User's Guide.

Compare answers on Attitude Inventory at the beginning and the end of your work with these materials.

UG 12

## PART II

### Guide for Workshop Leaders Using the Teacher Training Program in Nutrition

As the designated leader of these workshops, you are responsible for helping the participants become more informed and knowledgeable on the attitudes and behaviors which influence the nutritional status of students. You are also responsible for providing nutrition information and methods of presenting this information to workshop participants.

A workshop can be conducted in various time segments. This training program has three suggested breakdowns: a one-day workshop, a day-and-a-half workshop and a three-day workshop. A suggested time schedule for each workshop is given. Following these time schedules is a breakdown of activities to be included under each topic for each of the three different time schedules.

# ONE-DAY WORKSHOP

(Suggested Time Schedule for 7½ Hours)

|               |                                               |
|---------------|-----------------------------------------------|
| 8:30 - 8:45   | Introductions and Overview to Workshop        |
| 8:45 - 9:15   | Distribution of materials and testing         |
| 9:15 - 10:00  | <u>Food Attitudes and Behaviors</u>           |
| 10:00 -10:15  | Break                                         |
| 10:15 - 11:00 | <u>Assessment</u>                             |
| 11:00 - 11:20 | <u>Introduction to Nutrition</u>              |
| 11:20 - 12:00 | <u>Vitamins</u>                               |
| 12:00 - 1:00  | Lunch                                         |
| 1:00 - 1:45   | <u>Minerals</u>                               |
| 1:45 - 2:30   | <u>Introduction to Methodology Techniques</u> |
| 2:30 - 3:40   | Planning and Implementation of Teaching Ideas |
| 3:40 - 4:00   | Testing and Evaluation                        |

ONE AND ONE-HALF DAYS WORKSHOP  
(Suggested Time Schedule for 11½ Hours)

DAY 1

- 3:30 - 3:45     Introductions and Overview to Workshop
- 3:45 - 4:15     Distribution of Materials and Testing
- 4:15 - 5:15     Food Attitudes and Behaviors
- 5:15 - 6:00     Assessment
- 6:00 - 7:00     Dinner
- 7:00 - 7:20     Assessment (Recording of food eaten for dinner)
- 7:20 - 8:30     Introduction to Nutrition

DAY 2

- 8:30 - 9:30     Vitamins
- 9:30 - 10:30    Minerals
- 10:30 - 10:45    Break
- 10:45 - 12:00    Introduction to Methodology Techniques
- 12:00 - 1:00     Lunch
- 1:00 - 2:30     Planning and Implementation of Teaching Ideas
- 2:30 - 3:00     Testing and Evaluation



### THREE DAY WORKSHOP

(Suggested Time Schedule for 21 Hours)

#### DAY 1

|               |                                        |
|---------------|----------------------------------------|
| 8:30 - 8:45   | Introductions and Overview to Workshop |
| 8:45 - 9:15   | Distribution of Materials and Testing  |
| 9:15 - 10:00  | <u>Food Attitudes</u>                  |
| 10:00 - 10:30 | Snack - Ethnic Foods                   |
| 10:30 - 12:00 | <u>Food Behaviors</u>                  |
| 12:00 - 1:00  | Lunch                                  |
| 1:00 - 2:15   | <u>Assessment Techniques</u>           |
| 2:15 - 2:30   | Break                                  |
| 2:30 - 3:15   | <u>Assessment Techniques</u>           |
| 3:15 - 3:30   | Evaluation of the day                  |

THREE DAY WORKSHOP (Continued)

DAY 2

8:30 - 9:30      Introduction to Nutrition

9:30 - 10:10    Introduction to Vitamins

10:10 - 10:40    Vitamin Break

10:40 - 12:00    Vitamins

12:00 - 1:00     Lunch

1:00 - 2:15      Minerals

2:15 - 2:30      Break

2:30 - 3:15      Minerals

3:15 - 3:30      Evaluation of the day

THREE DAY WORKSHOP (Continued)

DAY 3

8:30 - 8:50     Organization of the Classroom

8:50 - 9:30     Lesson Planning

9:30 - 10:00    Ideas for Teaching Nutrition in the Classroom

10:00 - 10:45   Snack - Student Preparation

10:45 - 11:15   Involving the School Food Service in Teaching Nutrition

11:15 - 12:00   Group Work with Learning Modules

12:00 - 1:00    Lunch

1:00 - 1:40     Identifying Teaching Materials and Strategies

1:40 - 2:00     Planning Classroom Activities

2:00 - 2:10     Break and Form Groups

2:10 - 3:00     Planning Classroom Activities

3:00 - 3:30     Testing and Evaluations

# ACTIVITIES BY THE TYPE OF WORKSHOP

| TOPIC/CONCEPT                         | One Day                                                                                                                                                                                                                                                                                                                                                                                                                                                      | One and One-Half Day | Three Days |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------|
| Introduction and Overview to Workshop | --Highlight that the purpose of the workshop is to update and increase nutrition knowledge of the teachers. This will be accomplished by first looking at food attitudes and behaviors and the effect these have on nutrition. We will then study nutrition knowledge particularly looking at those nutrients which are most often lacking in American diets. Last we will look at the various ways in which this knowledge may be imparted to our students. | (Same)               | (Same)     |
|                                       | --Introduce Workshop leaders and participants in a way appropriate to the number of individuals involved.                                                                                                                                                                                                                                                                                                                                                    | (Same)               | (Same)     |
| Distribution of Materials and Testing | --Distribute materials to each participant. (These should be packaged together in a folder.) Go over symbols used in the program (p. UG 2-3).                                                                                                                                                                                                                                                                                                                | (Same)               | (Same)     |

# ACTIVITIES BY THE TYPE OF WORKSHOP (Continued)

| TOPIC/CONCEPT                                 | One Day                                                                                                                                                                                                                                                                                                                    | One and One-half Day | Three Day                                                                             |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------------------------------------------------------------------------|
| Distribution of Materials and Testing (Cont.) | -For testing, each participant should complete a pre-test and a pre-attitude inventory. These are found in Appendices A and B, pages UG 39-48. Answers should be recorded on two computer answer sheets. Have students mark tests as pre- or date so a comparison of scores can be made at the conclusion of the workshop. | (Same)               | (Same)                                                                                |
| UG 21 Food Attitudes and Behaviors            | -After appropriate introduction to topic, have students complete the survey on "How Were Your Food Habits Formed?" found on page 5 of the Teacher Training materials. (10 min.)                                                                                                                                            | (Same)               | (Same)                                                                                |
|                                               | -Orally share participant responses. (5-10 min.)                                                                                                                                                                                                                                                                           | (Same)               | (Same)                                                                                |
|                                               | -Using Transparency 1 (Appendix H, p.UG 77) discuss factors influencing food habits. (15 min.)                                                                                                                                                                                                                             | (Same)               | (Same) plus<br>-Use Transparency 2 (Appendix H, p.UG 79 for more discussion (10 min.) |
|                                               | -Complete list on "Recognition of Ethnic/Cultural Foods." (10 min.)                                                                                                                                                                                                                                                        | (Same)               | (Same)                                                                                |



ACTIVITIES BY THE TYPE OF WORKSHOP (Continued)

| TOPIC/CONCEPT                            | One Day                                                                                                                                                                                                                                                                                                                                                                     | One and One-half Day                                                                                                                                                                                       | Three Day                                                                                                                                                                                                                                                                 |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Food Attitudes and Behaviors (Continued) | -Share answers (UG 59-62). Discuss briefly (5-10 min.)                                                                                                                                                                                                                                                                                                                      | (Same) Plus<br>-View and discuss a film-strip from the "American Ethnic Food" series. (15-20 min.)                                                                                                         | (Same) Plus<br>-View and discuss several filmstrips from the "American Ethnic Food" series. (30-35 min.)<br><br>-View and discuss a film-strip from the "Foods, Fads and Fallacies" series. (10-15 min.)<br><br>-View and discuss the film "Let's Eat Food." (40-45 min.) |
| Assessment                               | -Summarize section on food attitudes and behaviors.<br><br>-Use some or all of Transparencies 3-8 (Appendix H, p. UG 81-91) to discuss assessment strategies which can be used. (20-25 min.)<br><br>-Have workshop participants complete food intake record (pp. 47-51) for the day previous to the workshop. Encourage them to do it for at least three days. (10-15 min.) | (Same)<br><br>(Same)<br><br>-Have workshop participants complete food intake record (pp. 47-51) for breakfast and lunch for the day of the Workshop. Time is allowed for completing the record for dinner. | (Same)<br><br>(Same)<br><br>-Have participants complete a 3-day food intake record (pp. 47-51) during workshop.                                                                                                                                                           |

UG 23

# ACTIVITIES BY THE TYPE OF WORKSHOP (Continued)

| TOPIC/CONCEPT       | One Day                                                                                                               | One and One-half Day | Three Day                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------|-----------------------------------------------------------------------------------------------------------------------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Assessment, (Cont.) | -Point out that in this section (pp. 29-70) are other nutritional assessment devices for various age groups. (5 min.) | (Same)               | (Same)<br><br>-Discuss signs of good nutrition using transparencies (Appendix H, 93) (5-10 min.)<br><br>-View film "Food for Life." (25 min.)<br><br>-Group work to complete open-ended observation form (pp. 121-23) using the film. (15-20 min.)<br><br>-Share responses on the observation form with entire group. (15-20 min.)<br><br>-To get more information on another problem, view the slide series "Nutritional Considerations and Concerns in Pregnancy and Lactation." (30 min.)<br><br>-Summarize assessment techniques. (5 min.) |

UG 25

ACTIVITIES BY THE TYPE OF WORKSHOP (Continued)

| TOPIC/CONCEPT             | One Day                                                                                                                                                                                                                                                                                                                                                      | One and One-half Day                                                                                                                     | Three Day                                                                                                                                                               |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Introduction to Nutrition | <ul style="list-style-type: none"> <li>-View and briefly discuss the slide-tape series "Nutrition Introduction." (20 min.)</li> <li>-View and discuss "Nutrition: The Individual" of the Look and Cook Nutrition series. (30 min.)</li> </ul>                                                                                                                | <ul style="list-style-type: none"> <li>-Same, but use more discussion. (30 min.)</li> <li>(Same)</li> <li>-Summary. (10 min.)</li> </ul> | <ul style="list-style-type: none"> <li>(Same)</li> <li>(Same)</li> </ul>                                                                                                |
| Vitamins                  | <ul style="list-style-type: none"> <li>-View and discuss slide-tape series on vitamins. Use Transparencies 10 and 11 (Appendix H, pp. UG 95-97)</li> <li>-Point out that more information on vitamins can be obtained by doing the programmed instruction (pp. 175-182 on Vitamin A and reading the section Ascorbic Acid (pp. 185-192) (10 min.)</li> </ul> | <ul style="list-style-type: none"> <li>(Same)</li> <li>(Same) Plus</li> </ul>                                                            | <ul style="list-style-type: none"> <li>(Same)</li> <li>(Same)</li> <li>-Complete programmed instruction on Vitamin A (pp. 175-182) (30 min.)</li> <li>(Same)</li> </ul> |
|                           |                                                                                                                                                                                                                                                                                                                                                              | <ul style="list-style-type: none"> <li>-View the film "Sugar Cereal Imitation Orange Breakfast." (10 min.)</li> </ul>                    |                                                                                                                                                                         |

ACTIVITIES BY THE TYPE OF WORKSHOP (Continued)

| TOPIC/CONCEPT   | One Day                                                                                                                                                                                                                                                                                                                                     | One and One-half Day                                                               | Three Day                                                                                                                                                                                            |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Vitamins, Cont. |                                                                                                                                                                                                                                                                                                                                             |                                                                                    | -Discuss the questions and answers section on Ascorbic acid (pp. 185-192) (15-20 min.)                                                                                                               |
| Minerals        | -View and discuss the slide-tape series on minerals. (35 min.) Use Transparencies 12 and 13 (Appendix H, UG 99-101)<br>-Point out that more information on minerals may be obtained by doing the programmed instruction on calcium and phosphorus (pp. 197-205) and reading the question and answer section on iron (pp. 207-212) (10 min.) | (Same)<br><br>(Same)<br><br>-Discuss in some detail the section on iron. (15 min.) | (Same)<br><br>(Same)<br><br>-Complete the programmed instruction on calcium and phosphorus (pp. 197-205) (30 min.)<br><br>-Discuss the questions and answers section on iron (pp. 207-212) (30 min.) |

UG 29

# ACTIVITIES BY THE TYPE OF WORKSHOP (Continued)

| TOPIC/CONCEPT                                                                                                                                                                                                                                             | One Day                                                                                                                                                                                                                         | One and One-half Day                                                              | Three Day                                                                                                                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Organization of the Classroom                                                                                                                                                                                                                             | -Discuss teacher-centered and student-centered classroom. (15-20 min.)                                                                                                                                                          | (Same)                                                                            | (Same)                                                                                                                           |
|                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                 | -View and discuss the film "Jenny is a Good Thing." (25-30 min.)                  | (Same)                                                                                                                           |
| Lesson Planning                                                                                                                                                                                                                                           | -Discuss behavioral objectives. Use the learning module "Develop a Nutrition Project" (pp. 229-242) as a guide for this discussion.                                                                                             | (Same)                                                                            | (Same)                                                                                                                           |
| (The amount of time spent on this topic will depend on the group. If most have been through a pre-service education program this may be very brief. If they have not (pre-school teachers) then more time will be needed to be spent on lesson planning.) | -Show a plan for a lesson (p.239 ). (10-30 min.) If only 10 minutes is needed on lesson planning, then you may either show "Jenny is a Good Thing" (18 min.) or one of the filmstrips from Lunchroom Learning series. (15 min.) | (Same)                                                                            | (Same)                                                                                                                           |
|                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                 | -Show and discuss one of the filmstrips from Lunchroom Learning Series. (15 min.) | -Show and discuss two of the filmstrips from Lunchroom Learning series. For discussion you might refer to pp. 365-370) (30 min.) |



ACTIVITIES BY THE TYPE OF WORKSHOP (Continued)

| TOPIC/CONCEPT                                 | One Day                                                                                   | One and One-half Day | Three Day                                                                                                                                                                                                                 |
|-----------------------------------------------|-------------------------------------------------------------------------------------------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lesson Planning<br>(Continued)                |                                                                                           |                      | -Work with the learning modules. Identify titles present: Resource Persons, Field Trips, Community Service Projects and Involving Parents. Divide into four groups to work as a group on the different modules. (45 min.) |
| Identifying Teaching Materials and Strategies | -Discuss briefly the selection of teaching materials (pp. 373-375) (5-10 min.)            | (Same)<br>(10 min.)  | (Same)                                                                                                                                                                                                                    |
|                                               | -Discuss briefly the selection and use of games in teaching. (5-10 min.)                  | (Same)<br>(10 min.)  | (Same)                                                                                                                                                                                                                    |
|                                               | -Note - Have games and teaching materials set up on display and for viewing during break. |                      |                                                                                                                                                                                                                           |
| Planning Activities for the Classroom         | -Discuss scope and sequence of nutrition concepts (pp. 407-420) (5-10 min.)               | (Same)<br>(10 min.)  | (Same)                                                                                                                                                                                                                    |

UG 33

ACTIVITIES BY THE TYPE OF WORKSHOP (Continued)

| TOPIC/CONCEPT                                 | One Day                                                                                                                                                                                                                                                                                                                                      | One and One-half Day                                                                                                         | Three Day                                                                                                   |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Planning Activities for the Classroom (Cont.) | <ul style="list-style-type: none"> <li>-Discuss planning strategies using just made. (5-10 min.)</li> <li>-Plan activities for your classroom using the planning chart ( p. 427)</li> <li>-Note - Do this in groups of 3 or 4 by grade levels. (15-20 min.)</li> <li>-Share activities planned (put on transparency) (10-15 min.)</li> </ul> | <ul style="list-style-type: none"> <li>(Same) (10 min.)</li> <li>(Same) (20-25-min.)</li> <li>(Same) (15-20 min.)</li> </ul> | <ul style="list-style-type: none"> <li>(Same)</li> <li>(Same)</li> <li>(Same)</li> </ul>                    |
| Evaluation                                    | <ul style="list-style-type: none"> <li>-Complete Nutrition/Education Post Test (Appendix C, p. UG 49 and Post Attitude Inventory in Nutrition (Appendix D, p.UG 55) Answers for both of these are to be recorded on computer answer sheets.</li> <li>-Evaluate Workshop using the forms provided (Appendix I, p. UG 103)</li> </ul>          | <ul style="list-style-type: none"> <li>(Same)</li> <li>(Same)</li> </ul>                                                     | <ul style="list-style-type: none"> <li>(Same)</li> <li>-(This is done each day of the workshop.)</li> </ul> |

UG 35

### PART III

#### Guide for Training Workshop Leaders to Use the Teacher Training Program in Nutrition

This part describes how one or two individuals who are very familiar with nutrition and education methodologies and the Teacher Training Program in Nutrition would train a team of potential workshop leaders. This potential team should be made up of 2-3 individuals. One should have expertise in the area of nutrition, while the others should be elementary and secondary educators. This training session would be approximately six hours in length. An appropriate time table for the one day training session is included. The leader doing this training would go through the Teacher Training Program in Nutrition, explaining the components of each section and answering any questions. The topic/content covered for the one day workshop (pages UG 19-35) could be used as a further guide. We would recommend the showing of the slides in the nutrition area, but not using any of the other films in this training session.

ONE DAY TRAINING SESSION  
FOR WORKSHOP LEADERS

|               |                                                                                                                                                           |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9:00 - 9:30   | Introduction to Program and Overview of the Materials                                                                                                     |
| 9:30 - 10:00  | Highlights of Materials in Section I                                                                                                                      |
| 10:00 - 12:00 | Presentation of Section II<br>Slides - Introduction to Nutrition<br>Slides - Vitamins<br>Slides - Minerals<br>Highlights of other Materials in Section II |
| 12:00 - 1:00  | Lunch                                                                                                                                                     |
| 1:00 - 2:00   | Highlight of Materials in Section III                                                                                                                     |
| 2:00 - 3:00   | Overview of Materials available for use in Workshops<br>Question/Answer Period                                                                            |

APPENDIX A

Nutrition/Education Pre-Test



Please do not write on this  
test paper

### NUTRITION/EDUCATION PRE-TEST

#### Part I: True-False

Directions: Record all answers on the computer sheet provided for you. For each item which is true blacken column A. For each item which is false blacken column B.

1. Since vitamins can be synthesized in the body, one does not have to be concerned about the intake of foods high in vitamins.
2. Vitamins help to regulate body functions.
3. Osteoporosis and osteomalacia are two diseases which may be caused by a deficiency of calcium and other nutrients.
4. The main function of iron is as a constituent of the hemoglobin.
5. An overweight person may be malnourished.
6. A successful way to control weight is to permanently use correct dietary patterns.
7. There is little to motivate the nutritionist since the nutritional problems of the community are likely to remain the same regardless of efforts to improve nutrition.
8. Community nutrition programs tend to be designated for nutritionally vulnerable target groups.
9. Because of cultural backgrounds many populations of the world have poor diets.
10. Dietary studies are a reliable source of information to indicate nutritional status of an individual.
11. The community, parents, and school food service personnel should form an integral part of a nutrition education program for children.
12. Objectives from the three domains of learning (cognitive, affective, and psychomotor) should all be utilized when teaching nutrition.

13. When developing curriculum it is important to develop new materials in order to best meet the needs of the students.
14. A purpose of assessing food intake in preschool children is to obtain information on parental feeding practices in regard to their children.
15. The evaluation of the daily nutrient intake is one method to assess nutritional adequacy.

Part II: Multiple Choice

Directions: Record all answers on the IBM sheet provided for you. Choose the best answer. Blacken the letter which corresponds to your selected answer.

16. Which of the following groups of vitamins are fat soluble?
  - a. A, B, C, and D
  - b. A, B, D, and K
  - c. A, D, E, and K
17. Choose from the list below those foods which are excellent sources of vitamin A (provide at least the U.S. RDA/serving).
  - a. carrots, pumpkin, and corn
  - b. corn, spinach, carrots, pumpkin and green beans
  - c. pumpkin, beef liver, spinach, and carrots
18. Choose from the list below those foods which are excellent sources of ascorbic acid (one serving provides at least 100% of the RDA).
  - a. green peas, cantaloupe, and broccoli
  - b. potatoes, oranges, and green peas
  - c. strawberries, cantaloupe, and broccoli
19. Throughout the life cycle, individuals need
  - a. different nutrients at different ages
  - b. the same nutrients in the same amounts
  - c. varying amounts of the same nutrients
20. The greatest nutritional problems in the U.S. today are
  - a. obesity, and scurvy
  - b. dental caries, obesity, and anemia
  - c. PCM, anemia, and nightblindness

21. The nutritional status of a family is affected by the socioeconomic level of the family in that
- a. a high socioeconomic level is positively related to a nutritious diet.
  - b. a low socioeconomic level is positively related to a poor diet.
  - c. socioeconomic level is not the only factor affecting a nutritious diet.
22. A dinner of soul foods such as peas and rice, dried beans with tomatoes, chitterlings, sweet potato pie would be missing which nutrient?
- a. ascorbic acid
  - b. calcium
  - c. vitamin A
23. When immigrants come to the United States they
- a. eat foods liked by people in the U.S.
  - b. have to modify food ways because preferred food is unavailable or too expensive.
  - c. leave food preferences behind.
24. The most important group of people influencing the formation of desirable nutritional habits in young children are
- a. parents
  - b. teachers
  - c. school lunch personnel
25. Which of the following methods of teaching is teacher-centered?
- a. learning center
  - b. lecture
  - c. role playing
26. Which of the following methods of teaching is student centered?
- a. demonstration by teacher
  - b. field trip
  - c. lecture
27. A good nutrition education program for your students involves the
- a. teacher
  - b. teacher and parent
  - c. teacher, parent and school food service

28. Which of the following types of periodicals would the average lay person be able to read and gain accurate nutrition information?
- a. educational
  - b. research
  - c. scientific
29. When assessing food intake, records should be kept for all
- a. food and liquid consumed during a three-day period
  - b. food consumed in one day
  - c. lunches consumed in a week
30. Which of the following nutrition concepts would be best taught to the student in grades 3-4?
- a. Basic four food groups
  - b. Relationship to diet to dental health
  - c. Relationship of politics to world nutrition problems



A P P E N D I X   B

Pre-Post Attitude Inventory on Nutrition

UG 45



### Pre-Post Attitude Inventory on Nutrition

Using a computer answer sheet blacken the letter to indicate how you feel about each statement. Use the following key:

- A - Strongly Agree
- B - Agree
- C - Uncertain
- D - Disagree
- E - Strongly Disagree

1. Nutrition should be taught at all grade levels.
2. It is important for all teachers to have a thorough understanding of nutrition.
3. The school lunch program is a part of nutrition education.
4. Home economics and health are the only classes where nutrition should be taught at the high school level.
5. Parents should be involved in nutrition education of their children.
6. The curriculum in every elementary class should include nutrition education.
7. Parents should assume the sole responsibility for helping their children learn to eat the correct foods.
8. Knowing the Basic Four Food Plan thoroughly is enough nutrition knowledge for a kindergarten teacher.
9. Teaching elementary students the Basic Four Food Groups is enough to help them choose the correct foods.
10. Special attention should be given to helping students drink enough milk and eat more vegetables and fruits.
11. Helping students learn to choose foods that are good for them is as important as helping them learn to read.
12. Teachers should provide nutrition information for parents/guardians of their students.
13. The teacher has little opportunity to influence food choices for students.
14. Helping children develop desirable food habits is a responsibility of parents - not the school.
15. The school lunchroom is only a place to eat - not a place to learn about nutrition.

16. School food service personnel can help you teach nutrition to your students.
17. Nutrition should be taught as a separate subject at all grade levels.
18. Integrating nutrition education into other units is an effective way of teaching.
19. Passing a cognitive test on nutrition knowledge shows that food habits are good and people are eating what they should.
20. Many meal patterns can provide the necessary nutrients.
21. Kindergarten children are too young to learn about nutrition.
22. By the time students are in high school, their dietary habits are so firmly established that nutrition education has little impact on their food choices.

APPENDIX C

Nutrition/Education Post-Test

UG 49

Please do not write on this  
test paper

NUTRITION/EDUCATION POST-TEST

Part I: True-False

Directions: Record all answers on the IBM sheet provided for you. For each item which is true blacken column A. For each item which is false blacken column B.

1. Since vitamins can be synthesized in the body, one does not have to be concerned about the intake of foods high in vitamins.
2. Vitamins help to regulate body functions.
3. Osteoporosis and osteomalacia are two diseases which may be caused by a deficiency of calcium and other nutrients.
4. The main function of iron is as a constituent of the hemoglobin.
5. An overweight person may be malnourished.
6. A successful way to control weight is to permanently use correct dietary patterns.
7. There is little to motivate the nutritionist since the problems of the community are likely to remain the same regardless of efforts to improve nutrition.
8. Community nutrition programs tend to be designated for nutritionally vulnerable target groups.
9. Because of cultural backgrounds many populations of the world have poor diets.
10. Dietary studies are a reliable source of information to indicate nutritional status of an individual.
11. The community, parents, and school food service personnel should form an integral part of a nutrition education program for children.
12. The three domains of learning (cognitive, affective, and psychomotor) can be used to teach nutrition.

13. When developing curriculum it is important to develop new materials in order to best meet the needs of the students.
14. A purpose of assessing food intake in preschool children is to obtain information on parental feeding practices in regard to their children.
15. The evaluation of the daily nutrient intake is one method to assess nutritional adequacy.

Part II: Multiple Choice

Directions: Record all answers on the IBM sheet provided for you. Choose the best answer. Blacken the letter which corresponds to your selected answer.

16. Which of the following groups of vitamins are fat soluble vitamins?
  - a. A, B, C, and D
  - b. A, B, D, and K
  - c. A, D, E, and K
17. Choose from the list below those foods which are excellent sources of vitamin A (provide at least the U.S. RDA/serving).
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  - b. corn, spinach, carrots, pumpkin and green beans
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  - c. strawberries, cantaloupe, and broccoli
19. Throughout the life cycle, individuals need
  - a. different nutrients at different ages
  - b. the same nutrients in the same amounts
  - c. varying amounts of the same nutrients
20. The greatest nutritional problems in the U.S. today are
  - a. obesity, and scurvy
  - b. dental caries, obesity, and anemia
  - c. PCM, anemia, and nightblindness



21. The nutritional status of a family is affected by the socio-economic level of the family in that
- a. a high socioeconomic level leads to a nutritious diet.
  - b. a low socioeconomic level leads to a poor diet.
  - c. socioeconomic level is not the only factor affecting a nutritious diet.
22. A dinner of soul foods such as peas and rice, dried beans with tomatoes, chitterlings, sweet potato pie would be missing which nutrient?
- a. ascorbic acid
  - b. calcium
  - c. vitamin A
23. When immigrants come to the United States they
- a. eat foods liked by people in the U.S.
  - b. have to modify food ways because preferred food is unavailable or too expensive.
  - c. leave food preferences behind.
24. The most important group of people influencing the formation of desirable nutritional habits in young children are
- a. parents
  - b. teachers
  - c. school lunch personnel
25. Which of the following methods of teaching is teacher-centered?
- a. learning center
  - b. lecture
  - c. role playing
26. Which of the following methods of teaching is student centered?
- a. demonstration by teacher
  - b. field trip
  - c. lecture
27. A good nutrition education program for your students involves the
- a. teacher
  - b. teacher and parent
  - c. teacher, parent and school food service

28. Which of the following types of periodicals would the average lay person be able to read and gain accurate nutrition information?
- a. educational
  - b. research
  - c. scientific
29. When assessing food intake, records should be kept for all
- a. food and liquid consumed during a three-day period
  - b. food consumed in one day
  - c. lunches consumed in a week
30. Which of the following nutrition concepts would be best taught to the student in grades 3-4?
- a. Basic four food groups
  - b. Relationship to diet to dental health
  - c. Relationship of politics to world nutrition problems

APPENDIX D

Pre-Post Attitude Inventory on Nutrition

UG 55

### Pre-Post Attitude Inventory on Nutrition

Using the answer sheet mark out the letter to indicate how you feel about each statement. Use the following key:

- A - Strongly Agree
- B - Agree
- C - Uncertain
- D - Disagree
- E - Strongly Disagree

1. Nutrition should be taught at all grade levels.
2. It is important for all teachers to have a thorough understanding of nutrition.
3. The school lunch program is a part of nutrition education.
4. Home economics and health are the only classes where nutrition should be taught at the high school level.
5. Parents should be involved in nutrition education of their children.
6. The curriculum in every elementary class should include nutrition education.
7. Parents should assume the sole responsibility for helping their children learn to eat the correct foods.
8. Knowing the Basic Four Food Plan thoroughly is enough nutrition knowledge for a kindergarten teacher.
9. Teaching elementary students the Basic Four Food Groups is enough to help them choose the correct foods.
10. Special attention should be given to helping students drink more milk and eat more vegetables and fruits.
11. Helping students learn to choose foods that are good for them is as important as helping them learn to read.
12. Teachers should provide nutrition information for parents/guardians of their students.
13. The teacher has little opportunity to influence food choices for students.
14. Helping children develop desirable food habits is a responsibility of parents - not the school.
15. The school lunchroom is only a place to eat - not a place to learn about nutrition.

16. School food service personnel can help you teach nutrition to your students.
17. Nutrition should be taught as a separate subject at all grade levels.
18. Integrating nutrition education into other units is an effective way of teaching.
19. Passing a cognitive test on nutrition knowledge shows that food habits are good and people are eating what they should.
20. Many meal patterns can provide the necessary nutrients.
21. Kindergarten children are too young to learn about nutrition.
22. By the time students are in high school, their dietary habits are so firmly established that nutrition education has little impact on their food choices.



APPENDIX E

Key for  
Recognition of Ethnic/Cultural Foods

**Key for**  
**Recognition of Ethnic/Cultural Foods**



What do you know about foods from various cultural and ethnic backgrounds? From the following list, identify the country, regional, or cultural group which is the origin of the food. Place a check mark in the appropriate column.

| Food                    | Soul foods | Southern foods | New England | Pennsylvania Dutch | Jewish | Mexican-American | Oriental | Italian | French |
|-------------------------|------------|----------------|-------------|--------------------|--------|------------------|----------|---------|--------|
| 1. Johnny cake          |            | X              |             |                    |        |                  |          |         |        |
| 2. Potato dumplings     |            |                |             | X                  |        |                  |          |         |        |
| 3. Bagels               |            |                |             |                    | X      |                  |          |         |        |
| 4. Greens and "fatback" | X          |                |             |                    |        |                  |          |         |        |
| 5. Enchiladas           |            |                |             |                    |        | X                |          |         |        |
| 6. Lasagna              |            |                |             |                    |        |                  |          | X       |        |
| 7. Cracklin' bread      | X          |                |             |                    |        |                  |          |         |        |
| 8. Bouillabaisse        |            |                |             |                    |        |                  |          |         | X      |
| 9. Chop suey            |            |                |             |                    |        |                  | X        |         |        |
| 10. Creme brulee        |            |                |             |                    |        |                  |          |         | X      |

| Food                   | Soul foods | Southern foods | New England | Pennsylvania Dutch | Jewish | Mexican-American | Oriental | Italian | French |
|------------------------|------------|----------------|-------------|--------------------|--------|------------------|----------|---------|--------|
| 11. Matzo balls        |            |                |             |                    | X      |                  |          |         |        |
| 12. Chow mein          |            |                |             |                    |        |                  | X        |         |        |
| 13. Chili              |            |                |             |                    |        | X                |          |         |        |
| 14. Yorkshire pudding  |            |                | X           |                    |        |                  |          |         |        |
| 15. Baba au rhum       |            |                |             |                    |        |                  |          |         | X      |
| 16. Tacos              |            |                |             |                    |        | X                |          |         |        |
| 17. Red eye gravy      |            | X              |             |                    |        |                  |          |         |        |
| 18. Apple strudel      |            |                |             | X                  |        |                  |          |         |        |
| 19. Boston baked beans |            |                | X           |                    |        |                  |          |         |        |
| 20. Fortune Cookies    |            |                |             |                    |        |                  | X        |         |        |
| 21. Spaghetti          |            |                |             |                    |        |                  |          | X       |        |
| 22. Black-eyed peas    |            | X              |             |                    |        |                  |          |         |        |
| 23. Spumoni            |            |                |             |                    |        |                  |          | X       |        |
| 24. Sauerbraten        |            |                |             | X                  |        |                  |          |         |        |
| 25. Grits              |            | X              |             |                    |        |                  |          |         |        |
| 26. Lox                |            |                |             |                    | X      |                  |          |         |        |

\*Adapted from : Kupsinel and Harker, *Nutrition Study Manual*.

APPENDIX F

ANNOTATED LIST OF  
AUDIO-VISUAL MATERIALS

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ANNOTATED LIST OF  
AUDIO-VISUAL MATERIALS

American Ethnic Foods 1977. Each filmstrip series contains teacher's guide, wall chart, spirit masters and recipes. (Jr/Sr High)

Chinese Food: Origins and Preparation--19 min. Discusses China's contribution to American cooking and shows how to prepare Chinese food.

German Food: Origins and Preparation--17 min. Discusses Germany's contribution to American cooking and shows preparation of a German meal.

Italian Food: Origins and Preparation--19 min. Discusses Italy's contribution to American cooking and shows preparation of Italian food.

Mexican Food: Origins and Preparation--16 min. Mexican contributions to American cooking is discussed and an example of Mexican food is prepared.

Native North American Food: Origins and Preparation--21 min. Discusses the influence of native North Americans on American cooking and preparation of a native North American meal is shown.

Soul Food: Origins and Preparation--16 min. Discusses the contribution of black Americans to American cooking and preparation of soul food is shown.

Bread: A Slice of Life--Provides youngsters with the facts needed to make intelligent food choices. Utilizes a curriculum-integrated approach to teach about food, nutrition, and the food industry. (Includes teacher's guide, masters, recipes) Primary, 3-6.

Creative Meal Planning--30 min. Attempts to stimulate interest in good nutrition by stressing creative aspects of meal planning while working in the fundamentals of good nutrition, shopping, and the preparation of wholesome, attractive meals. Jr./Sr High.



Dieting: The Danger Point--20 min. Examines the tragedy of anorexia nervosa and its relation to the dieting teenager. Looks at attitudes and activities signaling the development of anorexia nervosa, corrosive effects on interpersonal relationships, and a discussion of diagnosis, treatment and prevention of anorexia nervosa are also included. (Jr/Sr High)

Feeling Fine--Foods to Grow By--discusses the importance of eating nutritious foods rather than "junk" foods. (Primary)

Foods, Fads and Fallacies - (Series for Jr/Sr High)

Food Fads: You Bet Your Life--8 min. Discusses food fads and food quackery that promise cures for illnesses and diseases.

Is There a Perfect Diet? --7:15 min. Discusses some of the different fad diets leading to poor nutrition. Gives some suggestions on planning a nutritionally sound diet and includes some information on nutritional labeling.

I Like What I Eat Regardless--8 min. Discusses how culture, geography, and religion influence dietary patterns.

Is Natural Healthy? --8:45 min. Looks at some food fads and food additives that are believed to affect the nutritional value of foods.

Food for Life--Dairy Council of California, 1968. 22 min. Compares the food practices and problems of four teenagers, two from the U.S., one from South America, and one from Asia--in explaining what foods to eat for good nutrition. Jr/Sr High.

Food for Life: The Basic Four--Series, includes scripts, spirit masters and teacher's guide. Jr/Sr High.

"Milk Group" - 13 min.

"Meat Group" - 17 min.

"Bread and Cereal Group" - 13 min.

"Vegetable and Fruit Group" - 13 min.

Food Is for Eating--Discusses how we find out about foods--by eating, tasting, and smelling. Primary.

Food to Grow On: Nutrition from Newborn Through Teens--(Series) Includes scripts, spirit masters and teacher's guide. Jr/Sr High.

Nutrition Begins When you Did - 12 min. Discusses the importance of the mother's nutritional status before and during pregnancy and how it directly affects how a child will develop before and after birth.

From Toddler to Twelve - 11 min. Discusses some reasons teenagers fail to eat as well as they should and the effects of nutrition on their lives.

The Teenager vs. Nutrition - 11 min. Discusses some reasons teenagers fail to eat as well as they should and the effects of nutrition on their lives.

Food to Live On: Nutrition from the 20's through the 90's. - (Series)  
Each filmstrip contains spirit masters, teacher's guide. Jr/Sr High.

The Independent Twenties--Provides insight into the food related issues which adolescents will confront as they move into their adult years. Explores principles of nutrition as well as the social factors influencing their food choices. Tips are given for ensuring sound diet which enhances the many lifestyles which young adults follow.

The Changing Forties--Helps young people recognize that an active program of exercise and sound nutrition is necessary for good health in the middle years. Suggestions are given for healthful eating within the time pressures of modern living.

The Maturing Years--Focuses on the physical, emotional and social problems which handicap many older Americans and explains the relationship between good nutrition and the aging process.

Good Sense and Good Food - (Series) Jr/Sr High.

Man, Plant, and Animal - 9 min. Describes the food chain: we gather energy from eating plants (which have absorbed air, water, and sunlight) or animals that have eaten plants.

Chemistry of Foods - 8:45 min. Analyzes the role of vitamins and nutrients, showing how they are digested and transported to all cells in the body.

The Cell: Assimilation of Nutrients - 9 min. Focuses on the inner process by which cells transform food into energy or body substance.

Nutrition and Malnutrition - 11 min. Explains why avoiding malnutrition is not just a matter of eating energy-giving food.

Let's Eat Food - 35 min. Discusses diet and eating habits and radical changes that have occurred in the American diet during the last 25 years. Also looks at the relationship of diet to heart disease and several other nutrition-related health problems of later life which appear to originate in the dietary patterns of young people--CHD, tooth decay, obesity. Jr/Sr High.

Look and Cook - Nutrition Series. Jr/Sr High.

Nutrition: The Individual - Introduces nutrients and explains how the body utilizes them. The basic four food groups are outlined along with the number of servings needed daily by teenagers. Tips for weight reduction are given.

Nutrition: The World - Various cultural food practices are presented and reasons for malnutrition are explained. Leading authorities discuss possible solutions to the world's food problems.

Lunchroom Learning - Series, includes student activity sheets. Teachers.

Involvement - Discusses how students can get involved in menu planning for school lunch programs.

Food Preferences - Discusses some activities to use with students concerning food preferences and how to obtain the needed nutrients from food sources.

Nutrient Source and Function - Discusses the necessity of having a varied diet to obtain the necessary nutrients.

A Team Effort - Discusses the fact that nutrition must be taught in the affective as well as the cognitive domain. Students should be taught to choose foods that make them feel good.

The Magic Flavor - Tips for flavoring wholesome and low-calorie foods with a creative dash of Worcestershire sauce.

Planning to Eat? A Guide to Saving Time, Money, and Energy - 12 min. An overview of basic management skills useful in planning meals, buying and storing food and organizing work efficiently.

Professor Whacko's Incredible Pill - Grades 1-3. Professor helps younger children look at nutrition, basic four and the importance of having breakfast and eating good snacks.

The Sugar Cereal Imitation Orange Breakfast - 9 min. 1972. Comedian Marshall Efron shows how advertising can sell the sugar-frosted breakfast cereals even though they are bad for the teeth and low in nutrition. He examines various orange juice products, discussing the water, sugar, chemicals, and other additives. Jr/Sr High.

That Individual Touch - Presents ideas for meeting a variety of mealtime and entertaining situations. Illustrates ways of combining know-how and imagination with today's packaged foods to produce tasty dishes. Jr/Sr High.

Today's Choices - Discusses how food choices can affect your health and stresses the Jr./Sr High need for a good breakfast daily.

APPENDIX G

Key for  
Nutrition/Education Test



KEY FOR  
NUTRITION/EDUCATION TEST

Part I: True-False

1. F
2. T
3. T
4. T
5. T
6. T
7. F
8. F
9. T
10. F
11. T
12. T
13. F
14. T
15. T

Part II: Multiple Choice

16. c.
17. c.
18. c.
19. c.
20. b.
21. c.
22. b.
23. b.
24. a.
25. b.
26. b.
27. c.
28. a.
29. a.
30. a.

APPENDIX H

Transparency Masters

FACTORS INFLUENCING  
THE FORMATION OF FOOD HABITS

1. AVAILABILITY OF FOOD
2. ECONOMIC STATUS OF POPULATION
3. CULTURAL BACKGROUNDS
4. FAMILY EATING PATTERNS
5. SENSORY REACTIONS TO FOODS
6. EDUCATIONAL INFLUENCES
7. MOTIVATION

MAJOR FACTORS  
WHICH CAUSE CHANGES  
IN  
EATING PATTERNS

1. SCIENTIFIC ADVANCEMENT
2. INCREASED CONTACT WITH THE REST OF THE WORLD
3. MASS COMMUNICATION MEDIA
4. APPRECIATION OF FOREIGN FOODS
  - A. INFLUENCE OF MIGRANT NEIGHBORS
  - B. INTERNATIONAL TRAVEL
  - C. RESIDENCE ABROAD
  - D. SERVICE IN THE ARMED FORCES
5. ILLUSTRATIONS IN MAGAZINES AND AGGRESSIVE FOOD  
ADVERTISING
6. MORE COOKBOOKS AND GOURMET COOKING CLASSES  
AND CLUBS

FACTORS CONSIDERED VALUABLE IN PREDICTION OF OBESITY

1. FAMILY HISTORY OF OBESITY
2. WEIGHT 4 - 7 YEARS OF AGE
3. WEIGHT DURING INFANCY
4. BIRTHWEIGHT (AND WEIGHT/HEIGHT RATIO)



PERSONS WITH THE PROBLEM  
OF BEING OVERWEIGHT  
MAY HAVE:

1. AN INCREASED RISK OF ILLNESS AND DEATH (HEART DISEASE,  
ATHEROSCLEROSIS, HYPERTENSION, DIABETES)
2. DIFFICULTIES WITH THE BACK AND FEET
3. SHORTNESS OF BREATH
4. AN INCREASED RISK DURING SURGERY
5. HANDICAPS IN SOCIAL CONTACTS, IN FINDING EMPLOYMENT,  
AND IN SCHOOL ADMISSION

Transparency 4

## PREVENTION OF DENTAL DISEASE

1. AVOID FOODS WITH THE HIGHEST CARIES POTENTIALS.
2. USE CHEESE, NUTS, AND RAW VEGETABLES AND FRUITS INSTEAD OF CANDY AND COOKIES FOR SNACKS.
3. AVOID STICKY CANDY, SUGARED CHEWING GUM, AND SUCH CANDY AS "ALL DAY SUCKERS," AS WELL AS FREQUENT SOFT DRINKS.
4. CONSUME CARBOHYDRATES MAINLY AT MEALS.
5. USE A DIET THAT PROVIDES GOOD GENERAL NUTRITION, ESPECIALLY IN CHILDREN, FOR OPTIMAL DEVELOPMENTAL PROTECTION OF TEETH.
6. INSURE FOR ALL AN ADEQUATE INTAKE OF FLUORIDE IN EITHER WATER OR SUPPLEMENT FORM.

Transparency 5

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**"CARIES-POTENTIALITY" OF REPRESENTATIVE FOODS\***

| FOOD                       | TOTAL SUGAR CONTENT (%) | "CARIES POTENTIALITY" |
|----------------------------|-------------------------|-----------------------|
| CARAMEL                    | 64.0                    | 27                    |
| HONEY + BREAD + BUTTER     | 19.0                    | 24                    |
| HONEY                      | 72.8                    | 18                    |
| SWEET COOKIES              | 9.0                     | 18                    |
| MARMALADE                  | 65.3                    | 10                    |
| MARMALADE + BREAD + BUTTER | 16.3                    | 9                     |
| ICE CREAM                  | 2.4                     | 9                     |
| POTATOES (BOILED)          | 0.8                     | 7                     |
| POTATOES (FRIED)           | 3.9                     | 7                     |
| WHITE BREAD + BUTTER       | 1.5                     | 7                     |
| COARSE RYE BREAD + BUTTER  | 2.3                     | 7                     |
| MILK                       | 3.8                     | 6                     |
| APPLE                      | 7.5                     | 5                     |
| ORANGE                     | 6.5                     | 3                     |
| LEMONADE                   | 9.3                     | 2                     |
| CARROT (BOILED)            | 2.4                     | 1                     |

\* Adapted from Dunning, J. M.: Principles of Dental Public Health, 1970.

BASIC METHODS  
FOR  
OBTAINING DIETARY INFORMATION

1. 24-HOUR INTAKE
2. FOOD FREQUENCY LISTS
3. NUTRITION HISTORIES
4. WEIGHED FOOD INTAKE

Transparency 7

UG 89

COMPONENT PARTS  
OF A NUTRITIONAL ASSESSMENT

1. COMMUNITY EVALUATION
2. CLINICAL EXAMINATIONS
3. MEDICAL HISTORY
4. ANTROPOMETRIC MEASUREMENTS
5. ANALYSIS OF BLOOD AND URINE
6. DIETARY INTAKE STUDIES



## PHYSICAL SIGNS OF GOOD NUTRITION

1. A GENERAL APPEARANCE OF VITALITY AND WELL-BEING.
2. A STURDY, WELL-SHAPED SKELETAL FRAME.
3. WELL-FORMED TEETH AND HEALTHY GUMS.
4. A MUSCULAR STRUCTURE WHICH IS STRONG, WELL-DEVELOPED AND PROPERLY BALANCED SO THAT POSTURE IS GENERALLY ERECT.
5. A WELL-ROUNDED BODY CONTOUR SUGGESTIVE OF SUFFICIENT, BUT NOT EXCESSIVE, SUBCUTANEOUS FAT WHICH PROVIDES MODERATE PADDING FOR PROTECTION OF THE MUSCLES AND SKELETON.
6. ADEQUATE BODILY FUNCTIONS, SUCH AS GOOD APPETITE, DIGESTION, ELIMINATION, PHYSICAL ENDURANCE, NERVOUS STABILITY, AND PROMPT AND ADEQUATE RECOVERY FROM FATIGUE OR OTHER STRESS.
7. CLEAR, SMOOTH SKIN AND MUCOUS MEMBRANES.
8. PHYSICAL MEASUREMENTS OF HEIGHT, WEIGHT AND BODY COMPOSITION . . . (WHICH MEET) STANDARDS OF GROWTH AND DEVELOPMENT.

## SYMPTOMS OF LACK OF VITAMIN A

1. STUNTED GROWTH
2. LACK OF ABILITY TO SEE WELL IN DIM LIGHT (NIGHT BLINDNESS)
3. LACK OF MAINTENANCE OF EPITHELIAL TISSUES

## SYMPTOMS OF LACK OF VITAMIN C

### ACUTE LACK

1. FATIGUE
2. ROUGH SKIN
3. HEMORRHAGES IN THE EYE
4. GUM CHANGES
5. PAINS IN JOINTS
6. DRYNESS AND ITCHING OF SKIN
7. EXCESSIVE LOSS OF HAIR

### MODERATE LACK (INFANTS AND YOUNGER CHILDREN)

1. FAILURE TO GROW PROPERLY
2. WEAKNESS
3. RESTLESSNESS
4. IRRITABILITY
5. SWOLLEN JOINTS
6. TENDERNESS IN LOWER EXTREMITIES

### MODERATE LACK (OLDER CHILDREN)

1. LISTLESSNESS
2. LACK OF ENDURANCE
3. FLEETING PAINS IN LEGS AND JOINTS
4. SMALL HEMORRHAGES UNDER THE SKIN
5. GUMS THAT BLEED EASILY

Transparency 11

## SYMPTOMS OF IRON DEFICIENCY ANEMIA

1. PALENESS OF SKIN
2. WEAKNESS
3. SHORTNESS OF BREATH
4. LACK OF APPETITE
5. GENERAL SLOWING OF VITAL FUNCTIONS OF THE BODY

## SYMPTOMS OF LACK OF CALCIUM

1. STUNTED GROWTH
2. POOR QUALITY OF BONES AND TEETH
3. MALFORMATION OF BONES (RICKETS)



APPENDIX I

Evaluation Forms

UG 103

WORKSHOP EVALUATION  
TEACHER TRAINING PROGRAM IN NUTRITION

Directions: Show how you feel about each of the following statements by checking the appropriate column.

|                                                                                                                    |  |  |  |
|--------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 1. How well do you feel that you understand the factors which influence food attitudes and behavior?               |                                                                                   |                                                                                    |                                                                                     |
| 2. How do you feel about using the various methods of assessing changes in food attitudes and behaviors?           |                                                                                   |                                                                                    |                                                                                     |
| 3. How do you feel about using the various techniques to identifying common nutritional problems of your students? |                                                                                   |                                                                                    |                                                                                     |

4. What did you like best about this workshop? Why?
5. What did you like least about this workshop? Why?
6. Other suggestions for future workshops:

WORKSHOP EVALUATION  
TEACHER TRAINING PROGRAM IN NUTRITION

Directions: Show how you feel about today's workshop by checking the appropriate column.

|                                                                     |  |  |  |
|---------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 1. How well do you feel that you know the nutrient needs of humans? |                                                                                   |                                                                                    |                                                                                     |
| 2. How well do you feel you know the function of:                   |                                                                                   |                                                                                    |                                                                                     |
| calcium                                                             |                                                                                   |                                                                                    |                                                                                     |
| iron                                                                |                                                                                   |                                                                                    |                                                                                     |
| vitamin A                                                           |                                                                                   |                                                                                    |                                                                                     |
| ascorbic acid                                                       |                                                                                   |                                                                                    |                                                                                     |
| 3. How well do you feel you know good food sources of:              |                                                                                   |                                                                                    |                                                                                     |
| calcium                                                             |                                                                                   |                                                                                    |                                                                                     |
| iron                                                                |                                                                                   |                                                                                    |                                                                                     |
| vitamin A                                                           |                                                                                   |                                                                                    |                                                                                     |
| ascorbic acid                                                       |                                                                                   |                                                                                    |                                                                                     |

4. What did you like best about today's workshop? Why?

5. What did you like least about today's workshop? Why?

6. Other suggestions for future workshops:

# WORKSHOP EVALUATION

## TEACHER TRAINING PROGRAM IN NUTRITION

Directions: Show how you feel about today's workshop by checking the appropriate column.

|                                                                                             |  |  |  |
|---------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 1. How well do you feel that you will be able to use the following when teaching nutrition? |                                                                                    |                                                                                     |                                                                                     |
| Parents                                                                                     |                                                                                    |                                                                                     |                                                                                     |
| Community                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Food Service Personnel                                                                      |                                                                                    |                                                                                     |                                                                                     |

|                                                                          |  |  |  |
|--------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 2. How secure do you feel in using the following educational strategies? |                                                                                    |                                                                                     |                                                                                     |
| Concepts                                                                 |                                                                                    |                                                                                     |                                                                                     |
| Objectives                                                               |                                                                                    |                                                                                     |                                                                                     |
| Generalizations                                                          |                                                                                    |                                                                                     |                                                                                     |
| Learning Experiences                                                     |                                                                                    |                                                                                     |                                                                                     |
| Evaluation                                                               |                                                                                    |                                                                                     |                                                                                     |
| Teacher-centered Classroom                                               |                                                                                    |                                                                                     |                                                                                     |
| Student-centered Classroom                                               |                                                                                    |                                                                                     |                                                                                     |
| Evaluating nutrition Information                                         |                                                                                    |                                                                                     |                                                                                     |
| Planning a nutrition program for your age/grade level                    |                                                                                    |                                                                                     |                                                                                     |

3. What did you like best about this workshop?

Why?

4. What did you like least about this workshop?

Why?

5. Other suggestions for future workshops:

APPENDIX J

Slide/Tape Script--Nutrition Information

UG 111

## SLIDE-TAPE PRESENTATION

### Nutrition Introduction

1. Your body is made from the food you eat.
2. Starting with a single cell and growing to your present size, your food is you.
3. Food is necessary for many different things, including blood, bones, energy, and personality.
4. In fact, food of the right kind and amount gives you the feeling and appearance of good health. So if you eat the right food, then this is what good nutrition may do for you.
5. If your nutrition is poor you may be seriously handicapped by becoming tired easily and lacking stamina and enthusiasm.
6. Poor nutrition may creep into your life and cause worry and irritability. You have the most to do about your nutrition and the food that becomes you.
7. This may be difficult but you do not have to be a nutritionist or food scientist to select wisely the foods that are needed by the body.



8. If you have a dependable source of information and follow intelligently the directions given, foods can be chosen for health and vigor.
9. The important role that food plays in building strong, healthy individuals cannot be over-emphasized.
10. Scientists agree that modern medicine and appropriate environmental conditions are essential factors in building and protecting health. The foods selected from the environment are a major determinant in human nutrition. An individual may exercise more control over his nutrition than over most other factors which influence health and disease.
11. Scientists are working constantly to increase our knowledge about food and nutrition and to find ways of applying this knowledge for the benefit of individuals and nations. Whether you benefit from this knowledge depends on whether you use it in choosing the foods your body needs to be well-developed.
12. One of the causes of malnutrition is ignorance of what constitutes good nutrition and what food choices will lead to it.
13. A knowledge of the basic principles of nutrition is necessary if consumers are to use their food dollars wisely. Malnutrition resulting from a lack of basic knowledge about food values needs to be prevented.
14. Americans are probably more health conscious and more aware of the association of nutrition with nourishing food and good health than any other people.
15. Good nutrition is a condition whereby the body is well-nourished using food containing the essential nutrients in the amounts needed. Today many people realize that nutrition contributes to the health and welfare of all.

16. Food is a major part of nutrition. To study about nutrition we learn about foods. More specifically, we are interested in the food we eat.
17. The study of nutrition includes everything that happens to food--from the time you eat it until it is used for building, repairing, and maintaining the body.
18. Man needs food to 1) nourish the body; 2) satisfy hunger; 3) satisfy certain social needs; and 4) achieve certain psychological ends.
19. Man also needs food to meet the different requirements of the body: growth, repair and upkeep, and regulation of body processes.
20. These needs are met by many different nutrients. Foods contain chemical substances called nutrients. There are forty nutrients found in our foods which may fulfill the needs of the body.
21. These were first thought to be needed for the prevention of disease.
22. but now it is realized that nutrients are related to good health, vitality, and longevity. If our bodies could manufacture all the nutrients, then we could stop eating.
23. The nutrients are divided into six classifications of which you may be familiar. Carbohydrates include the sugars and starches, proteins provide amino acids, and fats give fatty acids. The other nutrients are vitamins, minerals and water.

24. Energy is an absolute necessity for our bodies, but to supply energy is not the only reason we eat. Materials are needed for the body's growth, repair and upkeep.
25. During the growing period, large amounts of every kind of materials for the building of muscle, bone, blood, vital organs and other tissues are necessary. When growth is complete, the same materials are still needed for upkeep and repair. At all times, materials regulating body processes keep everything running in an efficient, orderly fashion.
26. Our plan of action to reach the goal of good eating and good health is first to choose foods containing calories which keep company with an abundance of nutrients until all of our nutritional needs--except energy--have been supplied.
27. To carry out this plan we need to know something more about foods than just their caloric values. If we choose our foods with thought only for their caloric values, we could have a day with all the food our stomachs will hold, but obtaining very little nourishment for health and vitality.
28. Many nutrients occur together in foods, and this fact greatly simplifies the job of selecting a nutritionally adequate diet. Knowing about the nutrients, the foods which supply them, and why we need them, adds purpose and interest to our everyday eating habits.
29. Since no one food group supplies required amounts of all the nutrients, it takes many kinds of food to supply all the dietary essentials for good health. This makes eating more interesting and challenging.

30. Foods may contain other important nutrients which are as yet unknown. This is one of the many reasons why we need to get our nourishment from food instead of from vitamin and mineral pills or supplements which contain only the nutrients listed on the label.
31. Foods are the best sources of the nutrients we need. The grocery store, the meat market, the dairy, the bakery, the garden, the frozen food locker, the food storage cellar are the supply houses of good nutrition. Good nutrition must concern itself with the amounts as well as with kinds of nutrients. Neither can substitute for the other. A large quantity of one nutrient cannot make up for the lack of another nutrient.
32. The body must have a large enough supply of each nutrient to meet all of its different needs all of the time. A reserve supply of some nutrients in the body for use during emergencies is desirable also.
33. Recommendations for the amounts of different nutrients needed for good nutrition by persons living in the United States are made by a group of scientists who are members of the Committee on Recommended Allowances of the National Academy of Sciences--National Research Council. The committee has the responsibility for interpreting the results of research and setting up Recommended Dietary Allowances.
34. These are the amounts of calories and certain nutrients that are needed for the maintenance of good nutrition in healthy persons in the United States. Amounts are not specified for two of the nutrients (carbohydrates and fats) because supplying enough of these need not require special care in making food choices.
35. The allowances are higher than the least amounts required for health; they provide a margin of safety for the nutrients but not for calories. They do not cover the additional requirements associated with disease or with recovery from malnutrition.

36. These recommended allowances are the goals toward which to work in planning adequate diets. They are also the goals used in planning our country's food supplies.
37. We can be well fed and have good food habits without knowing about the recommended allowances.
38. It is the scientific basis for the Daily Food Guide of the Basic Four Food Groups which we do need to know about. Many of you are familiar with the Basic Four Food Groups which includes:
39. the Meat Group
40. the Grain Group
41. the Milk Group and
42. the Fruits and Vegetables Group.
43. For this Guide, the allowances have been translated into servings of the different foods which contain these nutrients. A balanced diet is the term often used for the combination of the right amounts of the right kinds of food to provide all of the nutrients in sufficient quantities for good health.
44. This nutrition training program explores in some depth the nutrients vitamin A, ascorbic acid, calcium, phosphorus, and iron.

## Vitamins Introduction

1. Once a day, just to be sure, millions of people living in the United States take a multi-vitamin capsule.
2. An advertisement on television shows a person explaining how he stays healthy and looking young.
3. Of course, he watches his diet,
4. gets plenty of exercise and,
5. just to be sure, takes a vitamin-mineral supplement daily. This is the way Americans have come to expect the marketing of dietary supplements.
6. These supplements are being promoted as an insurance policy to guarantee good health for all.
7. The implication of this advertising has contributed to the myth that even a balanced diet cannot provide adequate nutrients for good health.
8. Other people maintain that modern farming methods have depleted the soil of much needed nutrients so that the food supply no longer contains adequate nutrients. In truth, the nutrient content of a plant is controlled by its genetic structure and not by the nutrient content of the soil.
9. Many Americans believe that since some vitamins are good for them, the more the better.



10. Mothers are especially guilty of reacting to this philosophy. Many thousands of cases of vitamin poisoning are reported each year with the largest number of cases occurring in children. Others with rashes, diarrhea, or headaches may be unwary victims.
11. Another common belief is that vitamins provide extra energy, cure tiredness or a run-down feeling, or help in stressful situations.
12. Vitamins do not provide energy for the body but some B-vitamins will aid in the conversion of food to usable energy.
13. Unless there is actually a deficiency, excessive amounts of a vitamin provide no value, the effect is purely psychological.
14. Getting back to nature or using supplements may be a very expensive way of life. People sometimes pay extra for ascorbic acid supplements made from pure rose hips or other natural sources.
15. Each vitamin has a particular molecular structure that remains the same whether synthesized in the laboratory or extracted from an animal or plant or consumed as part of an animal or plant.
16. So it all comes back to the basic rules about eating a balanced varied diet. Food contributes vitamins as well as other nutrients plus bulk and texture to the diet for the good health of the human body.
17. The existence of vitamins was overlooked for many years because most foods supplied by nature contain a good amount and foods in an ordinary diet supplement each other in vitamin content.

18. Animals get their vitamins directly from plants or from other animals that have fed on plants.
19. Vitamins were the last nutrients to be discovered in the nutrition field. It was not until after 1900 when the chemical structure of carbohydrates, proteins, and fats was established that scientists found other substances in food which helped support life.
20. Vitamins appear in foods and the human body in such minute amounts that a more sophisticated knowledge of biology and chemistry was needed to isolate and distinguish each one.
21. Vitamins are organic compounds needed in very small amounts in the diet of higher animals to promote normal growth, reproduction or maintain health and life. These substances are not formed within the human body but must be supplied from sources outside the body, i.e., food.
22. Vitamins are destructable and can be broken down or altered in shape so they must be handled with care. The body makes special provisions to absorb vitamins, providing some with protein carriers.
23. A vitamin may be useful in one form here and another form there in the body, so special enzymes are provided to slightly alter the form of a vitamin to make it active in a given role. Vitamins are involved in the metabolism and fate of all cellular substances.
24. The chief aim of a study of vitamins is to inform individuals about the need for human beings to get plenty of all the various vitamins for the promotion of good health.

25. Vitamin concentrates and pure synthetic vitamins are useful for the cure of conditions in which persons are unable to consume an adequate diet. The objective of nutrition is to have enough of all the needed vitamins in the diet for the maintenance of normal body processes.
26. When we get our vitamins from foods, we obtain in addition all the other nutrients essential to health.
27. One method of classifying vitamins is to separate them on the basis of their solubility in fats or water. This also indicates the kinds of food in which certain vitamins may be found, the way a vitamin may be used in the body and the way a food needs to be handled during processing to preserve the vitamin content.
28. Fat soluble vitamins (A,D,E,K) are found in foods such as fish and plant oils.
29. They are handled in the body like fats; being transported on a protein carrier by way of the lymph to the subclavian vein entering the blood stream then to the heart and on to other organs and tissues.
30. These vitamins are stored in the cells of the body attached to fat and may be toxic to the body, especially A and D if consumed in large amounts.
31. All of the other vitamins (B-complex and ascorbic acid) are water soluble. This means they may be readily lost from foods by improper handling.

32. Water soluble vitamins cross the intestinal and vascular walls directly into the blood stream where they are transported to the different organs and tissues. These vitamins circulate freely among all the body organs and can be stored in the lean tissues for periods of a month or more.
33. Because these tissues are actively exchanging materials with the body fluids, water soluble vitamins are constantly being dissolved and carried away to be excreted by the kidneys.

## Mineral Elements Introduction

1. Mineral elements which are necessary for the human body actually originate in the soil which has been fed by rocks disintegrating over the ages.
2. Plants grow in the soil and take up these inorganic elements. Animals consume the plants and so humans may obtain minerals in their diet from animal as well as plant foods.
3. The knowledge of a need for minerals dates back to ancient times in both the Asian and Middle Eastern cultures. The antirachitic properties and other health benefits of milk, ground dry bones, and other rich sources of calcium and phosphorus have been known for ages.
4. Iron has long been a basic constituent of health tonics.
5. Sponges (containing iodine) were ground to be used in medicine for an enlargement of the neck (goiter) in early times.
6. In general, minerals have two main functions in the human body. The first is as an actual constituent of the body in both the hard and soft tissues.
7. In a second important role, minerals act as regulators and are necessary to certain body functions. Minerals seldom operate in isolation but are interrelated and balanced to perform well.



8.

Minerals required in relatively large amounts in the body are classified as macrominerals. Those required or present in amounts less than 0.005 percent are known as microminerals.

9.

About 4 percent of body weight can be attributed to minerals, most of which are in the hard tissues of the body.



# **indiana nutrition education training program**

score with  **for teachers**

## **teacher training program preschool thru 12**

HAROLD H. NEGLEY, SUPERINTENDENT - INDIANA DEPARTMENT OF PUBLIC INSTRUCTION

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# ATTITUDES, PROBLEMS, AND ASSESSMENT

## SECTION I

**Concept:** Factors influencing the food attitudes and behaviors of students include cultural, social and psychological as well as economic and geographic.

**Objectives:** The teachers will acquire an understanding of the cultural, social and psychological factors influencing food attitudes and behaviors.

The teachers will acquire an understanding of economic and geographic factors influencing food behaviors.

The teachers will acquire a knowledge of how to incorporate in their teaching strategy factors affecting student attitudes towards foods.

The teachers will acquire a knowledge of how to assess changes in food attitudes and behaviors.

**Concept:** Common nutrition problems of students exist today. The problems may also be a part of the nutrition problems of the community.

**Objectives:** The teachers will become aware of how to identify common nutritional problems of students, levels pre-school to 12.

The teachers will become aware of how to identify and define existing nutrition problems in the community.

### Section Topics:

- Food Attitudes and Behaviors
- Nutrition Problems
- Nutritional Status - Assessment
- Developing Social Surveys
- Observations
- Nutrition Concerns and Considerations in Pregnancy and Lactation  
(Script for slide series included)

## FOOD ATTITUDES AND BEHAVIORS



and



Food is one of the basic needs of existence. Food is a powerful force in society. Food habits and beliefs have great influence on the nutritional status of man through their effect on the selection of diet by the individual who holds them.

Tradition plays an important role in food selection. People often cling to their food habits for these tend to give them a sense of emotional well-being.

Food habits are often the result of economic pressures. Beliefs about foods and their properties are more resistant to change. They are usually interwoven into the culture of the group or society.

It is probable that taste, physiologic reactions subsequent to eating a particular food item, and local climatic, environmental and economic conditions determined what foods made up the diet of early man. Different national groups have settled our country and have brought with



them many different diets and foods. Other factors which have had influence on our diet include advertising and food industry innovations. Even with these technical advances our diets are poorer than ever before.

All individuals are affected by the food they eat. If there is not enough food, then people are hungry, but others may make very poor choices of food when there is a plentiful supply and become malnourished. People tend to develop patterns of eating food and these in turn become food habits for that particular group in generations to come.

Food has many meanings. We usually do not eat to keep our bodies healthy. A certain food may arouse feelings of happiness, sadness, femininity, masculinity, prosperity or poverty. Foods are associated with the culture in which a person lives and his experiences in everyday life. The foods of different families are influenced by the preferences of its members and these meals are not usually served to guests. Many families place importance on special meals; i.e., birthdays and holidays, when special foods are served. Ages of family members dictate the types of foods which may be served; i.e., cereal and milk for children and soft foods for the elderly.

Foods are eaten for many different reasons. Favorite foods can probably be traced to pleasant impressions when that food was eaten. Other foods may be eaten because of the prestige status they afford. You may try new foods in a friendly atmosphere or because friends are trying them. Looking back into your own childhood you may discover how your own eating patterns and food habits have developed.



HOW WERE YOUR FOOD HABITS FORMED?



Answer the following questions in the space provided.

1. What is your favorite food now?

What as a teenager?

What as a child?

2. Why is this food your favorite now?

Why as a teenager?

Why as a child?

3. What food is characteristic of your ethnic (cultural) background?

Why?

4. What foods are eaten/served at holidays and special family celebrations?

5. What foods do you eat when you are happy? Why?

6. What foods do you eat when you are unhappy? Why?



Factors influencing the formation of food habits include:

1. Availability of food
2. Economic status of population
3. Cultural backgrounds
4. Family eating patterns
5. Sensory reactions to foods
6. Educational influences
7. Motivation

The basic function of food is to sustain life. The quantity and kinds of food available to a group of people will determine their diet. Climate, soil, water and food habits of a population control the amount and composition of a food supply. How technically developed a country is will also be a determining factor in its food supply.

The ability of people to pay for their food supply is some indication as to the adequacy of their diet. It does not always hold true that groups with more money to spend for foods have a better diet. In the United States those families with higher levels of income may make poor choices of food even though many different items are available to them.



①

You might check recent publications for the current cost of foods at the various economic levels of families found in your community. If a large percentage of the community population is in the low economic range you would want to make sure that the suggestions on types of foods necessary for good nutrition would be affordable.



②

Your food habits stem mainly from the cultural background to which you belong. Those eating patterns become the food habits of the individuals living in the group. Many eating practices of groups can be traced back into history. Long since forgotten reasons for a food habit may no longer be true but old habits are strictly followed and not easily broken. There are many instances where food habits are based on religious taboos and may cause malnutrition in the people living by these food customs.

The history of eating patterns in the United States may be divided into three periods starting with the Colonial Period (1600-1766). The colonists blended the food habits brought with them and the foods already here. Meals were large with many meats and sweets included. The second period (1800-1900) of western migration included different types of

food. This was a blending of foods that could be carried with them without spoilage plus foods found in the area they passed through or where they settled. Later with the migration of other groups of people, different food habits were introduced. The third period during the present 20th century, is more influenced by the science of nutrition. Many people choose foods now because of their nutrient value. The development of food technology has made food available in seemingly limitless quantity.

Eating patterns in the United States today depend on subcultures and regional food habit patterns. People in different regions of our country eat different types of foods. Ethnic and religious groups coming to this country have retained some of their eating patterns when the foods are available. Younger individuals of the group tend to become more Americanized in their food habits.

The major factors which give rise to changes in eating patterns include:

1. Scientific advancement
2. Increased contact with the rest of the world
3. Mass communication media
4. Appreciation of foreign foods
  - a. influence of migrant neighbors
  - b. international travel
  - c. residence abroad
  - d. service in the armed forces

5. Illustrations in magazines and aggressive food advertising

6. More cookbooks and gourmet cooking classes and clubs

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## Recognition of Ethnic/Cultural Foods



①

What do you know about foods from various cultural and ethnic backgrounds? From the following list, identify the country, regional, or cultural group which is the origin of the food. Place a check mark in the appropriate column.

| Food                    | Soul foods | Southern foods | New England | Pennsylvania Dutch | Jewish | Mexican-American | Oriental | Italian | French |
|-------------------------|------------|----------------|-------------|--------------------|--------|------------------|----------|---------|--------|
| 1. Johnny cake          |            |                |             |                    |        |                  |          |         |        |
| 2. Potato dumplings     |            |                |             |                    |        |                  |          |         |        |
| 3. Bagels               |            |                |             |                    |        |                  |          |         |        |
| 4. Greens and "fatback" |            |                |             |                    |        |                  |          |         |        |
| 5. Enchiladas           |            |                |             |                    |        |                  |          |         |        |
| 6. Lasagna              |            |                |             |                    |        |                  |          |         |        |
| 7. Cracklin' bread      |            |                |             |                    |        |                  |          |         |        |
| 8. Bouillabaisse        |            |                |             |                    |        |                  |          |         |        |
| 9. Chop suey            |            |                |             |                    |        |                  |          |         |        |
| 10. Creme brulee        |            |                |             |                    |        |                  |          |         |        |

| Food                   | Soul foods | Southern foods | New England | Pennsylvania Dutch | Jewish | Mexican-American | Oriental | Italian | French |
|------------------------|------------|----------------|-------------|--------------------|--------|------------------|----------|---------|--------|
| 11. Matzo balls        |            |                |             |                    |        |                  |          |         |        |
| 12. Chow mein          |            |                |             |                    |        |                  |          |         |        |
| 13. Chili              |            |                |             |                    |        |                  |          |         |        |
| 14. Yorkshire pudding  |            |                |             |                    |        |                  |          |         |        |
| 15. Baba au rhum       |            |                |             |                    |        |                  |          |         |        |
| 16. Tacos              |            |                |             |                    |        |                  |          |         |        |
| 17. Red eye gravy      |            |                |             |                    |        |                  |          |         |        |
| 18. Apple strudel      |            |                |             |                    |        |                  |          |         |        |
| 19. Boston baked beans |            |                |             |                    |        |                  |          |         |        |
| 20. Fortune Cookies    |            |                |             |                    |        |                  |          |         |        |
| 21. Spaghetti          |            |                |             |                    |        |                  |          |         |        |
| 22. Black-eyed peas    |            |                |             |                    |        |                  |          |         |        |
| 23. Spumoni            |            |                |             |                    |        |                  |          |         |        |
| 24. Sauerbraten        |            |                |             |                    |        |                  |          |         |        |
| 25. Grits              |            |                |             |                    |        |                  |          |         |        |
| 26. Lox                |            |                |             |                    |        |                  |          |         |        |

\*Adapted from : Kupsinel and Harker, *Nutrition Study Manual*.



2

Flavor of food influences the amount and kind of foods eaten. It is a major factor in our acceptance of any food. We eat many foods because we like the flavor.

Children have more taste buds than do adults but there is little proof that they are more sensitive to flavors than adults. Individuals vary in the sharpness of their tastes which may contribute to the likes and dislikes of foods by different people.

Flavor involves not only the taste and aroma of a food but also the color, texture, form and temperature. As far as preferences for different foods in the United States, beef and chicken are the most preferred meats. All desserts ranked high. Milk and citrus fruits are liked but not used in recommended amounts. Vegetables, especially the strong ones, are universally disliked. It is important that we educate our children to like a variety of vegetables, cooked as well as raw. Parent's likes and dislikes are a strong indication of what the children will eat. Enjoyment of food is greater when the food is eaten in attractive surroundings with congenial company making it a satisfying social experience as well as creating a more favorable condition for the physiological utilization of food.



①

If there were foods on the list of cultural and ethnic foods that you have not tasted, try at least one of these foods if they are available, or if you could, prepare one of them.



②

A child's food habits begin at birth. Children will have a favorable attitude toward food if they are fed when hungry in a relaxed atmosphere with food that satisfies them. A simple formula for helping a child maintain a favorable attitude toward eating includes attractive food, small servings, some freedom to choose his own foods and eat in his own way, adequate play and sleep, and relaxed parents. The daily pace of the child will affect his food habits, so much care should be taken to have adequate time for meals, school, play and sleep.

There are other factors in the United States which may have an unfavorable influence on food habits. Some of the reasons are 1.) very little food is home grown, 2.) snacking has increased, 3.) more meals are eaten away from home and 4.) more people are dieting.

In every country there seems to be superstition and false theories about food. There has not been too much written as yet about folklore

of food in this country. Some of our current food beliefs or fads are being exploited by health food manufacturers and quack doctors at considerable profit. Fad foods are big business in this country today. Some food fads do little harm except to relieve people of their money. Others claim success in curing diseases for which medicine has yet to find a cure. The food quacks of today probably replace the medicine man of traditional cultures and the vendors of patent medicines.

We are all familiar with certain religious taboos concerning foods. Food beliefs may also be closely related to medical practices of many countries. Another aspect which can influence nutrient intake is the prestige attached to scarce, high-priced food items. There are also foods classified by various groups as unfit for human consumption while others may eat them.

Food habits are the way in which individuals or groups respond to social and cultural pressures in selecting, consuming, and utilizing portions of the available food supply. Food habits are very difficult to change, especially in the adult although change does occur spontaneously. Even when meals are well balanced and varied, adults may dislike the food if it does not fit into their accustomed patterns. Need is probably the most common motive for changing dietary habits. It must be recognized by the individual and it must be his own decision to change his dietary habits.

Food habits may be modified only after the diet has been thoroughly studied. Additions or corrections should be made without changing the original diet too much. Not all diets are bad. Some changes are



desired because of a specific motivation such as obesity, diabetes, or high blood pressure. Goals for good general nutrition are less tangible and so much harder to obtain. Nutritionists need to consider the best parts of the diet and build from there to give the person a nutritionally adequate diet.

Diet improvements in today's world have included the introduction of substitutes resembling familiar foods and enrichment. New foods may be accepted by the populace if the country's leaders eat them or the food has a high money value. Changes in culture go along with changes in food habits. It has been shown that the individual's food choices are affected by such variable as climate, availability, religion, emotions, taste, economics, local agriculture practices and cultural traditions. Therefore, many factors must be considered before any changes can be made.



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## NUTRITION PROBLEMS



②

The United States is the most affluent country in the world and although we have very few recorded deficiency diseases, it is apparent that many nutrition related problems occur here. Studies of the population reveal that individual diets are often lacking in Vitamin A, ascorbic acid, calcium, and iron. It has also been found that too many diets are high in calories, sugar, fats and salt.

What are the three major nutrition-related problems in the United States?

*Although there are a number of concerns, the three major problems listed in rank order are:*

1. *obesity*
2. *dental caries*
3. *iron-deficiency anemia*

*Each of these problems will be explored in some detail.*

What is obesity?

*An individual who weighs ten percent above what is theoretically normal for his height is known as being overweight. However, if his/her weight is 15% over the normal weight she/he is mildly obese, 20% over is obese and 25% over is grossly obese. The status of being overweight is*

one of the most pressing problems in the United States today. It affects all age groups. Excessive weight causes many disadvantages and dangers to the human body. Those persons who have a problem with being overweight may have:

1. an increased risk of illness and death (heart disease, atherosclerosis, hypertension, diabetes)
2. difficulties with the back and feet
3. shortness of breath
4. an increased risk during surgery
5. handicaps in social contacts, in finding employment, and in school admission

What are the causes of obesity?

The causes of being obese include:

1. overeating
2. inactivity
3. inheritance
4. inactivity of certain endocrine gland (thyroid, hypothalamus)
5. emotional insecurity and frustrations

Overweight individuals may be malnourished persons with increased amounts of fatty tissue and poor vitamin and mineral status. Some times people with low incomes are forced to purchase cheaper foods which are high in calories and low in nutrient content, but enough of the high nutrient body building foods. Individuals with higher incomes may also be overweight because of poor food choices.

How can the problem of obesity be alleviated?

*The goal of any reducing program is not to normalize body weight arbitrarily, but to reduce to normal the amount of stored fat in the body. It is necessary to cut down on the concentrated energy foods and eat a well-balanced adequate diet, along with an exercise program.*

What are dental caries?

*Caries are one of the most widespread of all chronic diseases and nutrition is a basic factor in the control and solution of this nutritional problem. Dental decay results when oral bacteria act on the susceptible to decay.*

What are the causes of dental caries?

*Some forms of carbohydrates, especially table sugar, accumulate on the teeth and are acted upon by bacteria. During this fermentation process, acid is generated and penetrates the tooth enamel causing the tooth to decay. Sweet foods that are sticky and adhere to the teeth are more destructive than those in liquid form. The chart, "Caries-Potentiality of Representative Food" shows the relationship of sticky sweets to dental caries.*

How can dental caries be reduced?

*A well-balanced nutritionally adequate diet with lower amounts of sugar is important for healthy teeth. Sweets should be eaten at mealtime followed by brushing the teeth if possible. Fluoride, a mineral element, is now regarded as a specific nutrient of proven value in producing decay resistant teeth. Many water supplies are supplemented with fluorine to help prevent tooth decay.*

**"CARIES-POTENTIALITY" OF REPRESENTATIVE FOODS\***

| FOOD                       | TOTAL SUGAR CONTENT (%) | "CARIES POTENTIALITY" |
|----------------------------|-------------------------|-----------------------|
| CARAMEL                    | 64.0                    | 27                    |
| HONEY + BREAD + BUTTER     | 19.0                    | 24                    |
| HONEY                      | 72.8                    | 18                    |
| SWEET COOKIES              | 9.0                     | 18                    |
| MARMALADE                  | 65.3                    | 10                    |
| MARMALADE + BREAD + BUTTER | 16.3                    | 9                     |
| ICE CREAM                  | 2.4                     | 9                     |
| POTATOES (BOILED)          | 0.8                     | 7                     |
| POTATOES (FRIED)           | 3.9                     | 7                     |
| WHITE BREAD + BUTTER       | 1.5                     | 7                     |
| COARSE RYE BREAD + BUTTER  | 2.3                     | 7                     |
| MILK                       | 3.8                     | 6                     |
| APPLE                      | 7.5                     | 5                     |
| ORANGE                     | 6.5                     | 3                     |
| LEMONADE                   | 9.3                     | 2                     |
| CARROT (BOILED)            | 2.4                     | 1                     |

\* Adapted from Dunning, J. M.: Principles of Dental Public Health, 1970.

What is iron-deficiency anemia?

*Iron-deficiency anemia is widely prevalent throughout the world, but the exact rate of incidence is not known. In iron-deficiency anemia the level of hemoglobin in the red blood cells is reduced and the red cells are smaller.*

What are the causes of iron-deficiency anemia?

*Iron deficiency occurs after a long period of time when iron needs are high and the diet is low in absorbable iron. Anemia may also be brought about by an excessive loss of blood from the body.*

What can be done to overcome iron-deficiency anemia?

*The body will replace the major loss of iron from hemoglobin by using iron stores plus development of a more efficient absorption of dietary iron. If the diet is low in iron, then supplements would be needed to promote rapid blood regeneration. From three weeks to three months may be required to replenish the losses from the donation of one pint of blood.*

What are some symptoms of iron-deficiency anemia?

*Anemia reduces the oxygen-carrying capacity of the blood, resulting in such symptoms as paleness of skin, weakness, shortness of breath, lack of appetite and a general slowing up of the vital functions of the body. The extent of the body's need for iron influences the amount of iron absorbed from foods in the daily diet.*



Why is it important to identify nutritional problems early?

*Severe and prolonged nutritional deficiencies in early life may have a permanent effect on the intellectual potential and learning behavior of a child. The degree to which the brain and nerve tissue is developed and functions satisfactorily, depends on the adequacy of the nutrient supply.*

*When growth rates are moderately below norms and malnutrition is not so severe, mental behavior may be inferior due to depleted energy, inability to concentrate, and fatigue. In many schools of low-socioeconomic districts, children may be troubled with these problems. School breakfast and lunch programs help to alleviate this problem.*

*Studies have been made on the effects of long duration malnutrition on adults. It was found that there are many changes in personality but these are overcome after several months when an adequate diet is given.*

*Malnutrition is a factor which increases the impairment of the resistance of the body to infections of many types. Low protein and vitamin content of the diet brings a decrease in the number of antibodies manufactured in the body and so infections may run rampant.*

*In studies conducted on people consuming low-calorie diets, work output was much lower. These people have higher absenteeism, accident rates, less energy to perform tasks and less resistance to disease.*



*Life expectancy has increased for all people in the United States. The major reason for this is the fact that the death rate of infants and children has been greatly reduced. Factors which have contributed to this success are:*

- 1. advances in medical knowledge*
- 2. improvements in sanitation*
- 3. better medical care*
- 4. increased public health services*
- 5. greater knowledge of child-feeding requirements*
- 6. advancement in the knowledge of nutrition*

*To add years to the life of a mature person is still a problem. Much research is needed to find what the chief causes of death in middle and later life are, and alleviate the problems. This will be most difficult to do. Forming good food habits at any age helps, but a person who has been well-nourished his entire life has a better chance for a long and productive life.*

## Suggested Activities Related to Nutrition Problems



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*The suggested activities are some which you might want to use with your students. These activities are designed to either help identify or alleviate these nutrition-related problems.*

1. *Using the assessment instruments, i.e., food intake records, etc., record food eaten and look particularly at calories consumed, iron intake and sweets. This might help you identify any problems related to the three discussed.*
2. *Using the learning module on Resource Persons, invite a resource person such as a dietitian to discuss weight control, dentist to discuss care of teeth, etc. to your classroom.*
3. *Using observational techniques you can look for symptoms of iron-deficiency anemia, eating habits of obese children, etc.*
4. *Have a tasting party of food rich in iron. Since many of these foods are disliked or have never been tried by children, this could perhaps create a positive attitude toward iron rich foods.*
5. *View film strips- "Good Sense & Good Food," Walt Disney Educational Media. "Toothtown U.S.A." National Dairy Council.*



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## NUTRITIONAL STATUS - ASSESSMENT



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and



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To be most effective, any nutrition program should deal with the specific problems of the people for whom it is intended. Whether a nutrition program is educational, interventional or legislative, it should be based on firm data of the needs of the population group involved.

Nutritional status is the condition of nutrition in the individual. Health is not only the physical well-being of the individual but the mental and emotional fitness as well.

Putting matters in a positive light first, here is a recent American Medical Association simplification of the physical signs of good nutrition that might help to assess nutritional status through appearance.

1. A general appearance of vitality and well-being.
2. A sturdy, well-shaped skeletal frame.

3. Well-formed teeth and healthy gums.
4. A muscular structure which is strong, well-developed and properly balanced so that posture is generally erect.
5. A well-founded body contour suggestive of sufficient, but not excessive, subcutaneous fat which provides moderate padding for protection of the muscles and skeleton.
6. Adequate bodily functions, such as good appetite, digestion, elimination, physical endurance, nervous stability, and prompt and adequate recovery from fatigue or other stress.
7. Clear, smooth skin and mucous membranes.
8. Physical measurements of height, weight and body composition . . . (which meet) standards of growth and development.

These are cited to show how nearly impossible it is for the average American today to spot very much wrong with his nutrition by looking at his body.

Techniques for the study of nutritional status have been developing for several decades, but only in the past decade has federal money been allocated for surveys designed to assess nutritional status within the United States. Data from these surveys will provide the focus for more effective nutrition programs.

The component parts of a nutritional assessment include community evaluation, clinical examinations and medical history, anthropometric measurements, analysis of blood and urine, and dietary intake studies. Each of these component parts contribute to the total evaluation of the population. In developed countries like the United States, few acute deficiency diseases are likely to be found so that no single area of assessment gives a true picture of the nutritional health of an individual or population group.



For the purpose of this study about nutritional assessment, let us look at the component parts and their contribution to the analysis of nutritional status of the individual or group.

#### Community Assessment

A broad picture of the nutritional health of a community may be obtained indirectly from data easily available from existing sources. Nutritional health is closely related to certain characteristics of a community. If a high percentage of the population is economically, socially, educationally and/or medically deprived, nutritional problems are likely to be found. Sources of information available about the community will include census figures with age distributions, birth rates, morbidity and mortality statistics, hospital records, and data from health and welfare agencies. A profile of income, housing, sanitation, disease rates, cultural and ethnic characteristics, food supply and availability of health programs and nutritional resources may be compiled to aid in the assessment of nutritional status of the community.

#### Clinical Assessment

This component part will include a health history, physical examination, and a dental examination. Body measurements are also included in the category of clinical assessment. Clinical examination is most valuable for impoverished populations and

diminishes in importance as the adequacy of the food supply for a population improves.

A physical examination may reveal evidence of a nutritional deficiency not detected by dietary or laboratory methods. The identification of even a few cases of clear-cut nutritional deficiency may be revealing and provide a clue to other pockets of malnutrition in the community. This examination may also reveal signs of a host of other diseases which need treatment. A physical examination should be used as a screening process indicating further study in the area. The major purpose of including these observations is to indicate whether nutritional problems may exist within a population.

A dental examination should be included in nutritional assessment because dental health may reflect dietary inadequacy during tooth formation or the sweets and fluorine intakes following tooth eruption. Severe dental problems may influence food intake and be the cause of present dietary inadequacy. Screening of individuals should include a count of decayed, missing, and filled teeth and an evaluation of the status of gingival health.

Growth is a sensitive indicator of the nutritional status of children. The pattern of growth over a time period and the progress of growth along a consistent channel are the best measures of whether the diet is supplying sufficient nutrients for growth, energy, and other physiological needs without excess which may lead to obesity. A large array of body measurements may be done, but for practical use measurements should be limited to those which contribute most to the

evaluation of growth, overnutrition and undernutrition. The choice of anthropometric measurements will depend on the age of the child, his cooperation in the procedure, the degree of detail desired, and the skill and accuracy of the examiners.

Weight and height are the measurements best standardized and most reliable in the hands of semi-trained personnel. Weight and height growth charts are available to record this data for growing children. Other measurements should be obtained only by skilled workers carefully trained in techniques. Measurements which are especially helpful in the nutritional assessment of children include: height; weight; head and chest circumference; diameters of wrist, knee, hip and shoulder width; triceps, subscapular and chest skinfold.

#### Biochemical Assessment

This assessment of nutritional status is made on blood and urine. Biochemical tests are designed to measure specific body functions. Blood studies may measure the levels of the actual nutrients in the blood, metabolites of nutrients, or enzymes for which specific nutrients are essential. Those nutrients which are measured directly include protein, vitamin A and carotene, ascorbic acid, and lipids. The measurements of enzymes in the blood may provide an early indication of the onset of malnutrition. Biochemical assessment is a valuable adjunct to the evaluation of nutritional status; its value will increase as methodology and standards of judgment improve.

### Dietary Assessment

Dietary analysis serves as another part of the total evaluation of the nutritional status of the individual. The aim of dietary studies is to obtain reliable information of the food consumed by an individual or group in order to estimate the adequacy or inadequacy of intake.

Four basic methods are in common use for obtaining dietary information on individuals:

1. 24 hour intake
2. Food frequency lists
3. Nutrition histories
4. Weighed food intake

The 24 hour intake is the method most commonly used in surveys of large populations. This summary of the kinds and amounts of all foods consumed by a subject are recorded on the day of consumption. It may be obtained by interview or self-recorded. Daily variations may be caused by appetite, activity, or time schedules.

A food frequency list may be used to record how often, but not how much, of various foods have been consumed over a given period of time. The food frequency list can not be used for calculating the nutrient content of the diet because sizes of servings are not listed but may be rated by a food scoring system.

The detailed nutrition history is a more extensive and time consuming method which requires a trained nutritionist. This is the only method which permits calculation of the usual nutrient content of diets



of individuals and is more likely to be successful in correlating nutrient intake data with physical and biochemical findings.

The weighed food intake method is the most detailed and accurate. It is used primarily in balance studies or in controlled experiments.

For a group of people with a common food preparation area, a record of food used during a given period of time may be obtained. Adjustments may be made for food wasted and for food eaten elsewhere by members of the group. This method is useful for comparing average intakes of different groups and for identifying groups which may be at risk of malnutrition.

#### Standards of Dietary Adequacy

There are many food nutrients known to be essential for growth and health. Nutrients are the individual chemical substances contained in food that are used to nourish the body. Most of these nutrients are widely distributed in foods and we do not need to worry about shortages if we eat a varied diet. To help us know what to eat, dietary standards have been established--estimated amounts of certain nutrients which are recommended for different segments of the population.

Many countries have developed dietary standards for their people. The dietary allowances of the United States were first published in 1943, by the Food and Nutrition Board of the National Academy of Sciences - National Research Council. They are based on nutrition research



2 applicable to quantitative human needs. Adjustments are made to the allowances every five years. These are only guidelines to be used to help the individual choose a diet. The allowances provide a buffer against increased needs during times of common stress and permit full realization of growth and productive potential. A Recommended Dietary Allowance (RDA) Table is included for your information and for use in analyzing your food intake record.

FOOD AND NUTRITION BOARD  
NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL  
RECOMMENDED DAILY DIETARY ALLOWANCES,<sup>a</sup> Revised 1980

Designed for the maintenance of good nutrition  
of practically all healthy people in the U.S.A.

|           | Age<br>(Years) | Weight |       | Height |      | Protein<br>(g) | Calcium<br>(mg) | Phosphorus<br>(mg) | Magnesium<br>(mg) | Minerals     |              |                |
|-----------|----------------|--------|-------|--------|------|----------------|-----------------|--------------------|-------------------|--------------|--------------|----------------|
|           |                | (kg)   | (lbs) | (cm)   | (in) |                |                 |                    |                   | Iron<br>(mg) | Zinc<br>(mg) | Iodine<br>(µg) |
| Infants   | 0.0-0.5        | 6      | 13    | 60     | 24   | kg x 2.2       | 360             | 240                | 50                | 10           | 3            | 40             |
|           | 0.5-1.-        | 9      | 20    | 71     | 28   | kg x 2.0       | 540             | 360                | 70                | 15           | 5            | 50             |
| Children  | 1-3            | 13     | 29    | 90     | 35   | 23             | 800             | 800                | 150               | 15           | 10           | 70             |
|           | 4-6            | 20     | 44    | 112    | 44   | 30             | 800             | 800                | 200               | 10           | 10           | 90             |
|           | 7-10           | 28     | 62    | 132    | 52   | 34             | 800             | 800                | 250               | 10           | 10           | 120            |
|           | 11-14          | 45     | 99    | 157    | 62   | 45             | 1200            | 1200               | 350               | 18           | 15           | 150            |
| Males     | 15-18          | 66     | 145   | 176    | 69   | 56             | 1200            | 1200               | 400               | 18           | 15           | 150            |
|           | 19-22          | 70     | 154   | 177    | 70   | 56             | 800             | 800                | 350               | 10           | 15           | 150            |
|           | 23-50          | 70     | 154   | 178    | 70   | 56             | 800             | 800                | 350               | 10           | 15           | 150            |
|           | 51+            | 70     | 154   | 178    | 70   | 56             | 800             | 800                | 350               | 10           | 15           | 150            |
|           | 11-14          | 46     | 101   | 157    | 62   | 46             | 1200            | 1200               | 300               | 18           | 15           | 150            |
| Females   | 15-18          | 55     | 120   | 163    | 64   | 46             | 1200            | 1200               | 300               | 18           | 15           | 150            |
|           | 19-22          | 55     | 120   | 163    | 64   | 44             | 800             | 800                | 300               | 18           | 15           | 150            |
|           | 23-50          | 55     | 120   | 163    | 64   | 44             | 800             | 800                | 300               | 18           | 15           | 150            |
|           | 51+            | 55     | 120   | 163    | 64   | 44             | 800             | 800                | 300               | 10           | 15           | 150            |
| Pregnant  |                |        |       |        |      | +30            | +400            | +400               | +150              | b            | +5           | +25            |
| Lactating |                |        |       |        |      | +20            | +400            | +400               | +150              | b            | +10          | +50            |

<sup>a</sup>The allowances are intended to provide for individual variations among most normal persons as they live in the United States under usual environmental stresses. Diets should be based on a variety of common foods in order to provide other nutrients for which human requirements have been less well defined. See text for detailed discussion of allowances and of nutrients not tabulated. See page 35 for weights and heights by individual year of age, and for suggested average energy intakes.

<sup>b</sup>The increased requirement during pregnancy cannot be met by the iron content of habitual American diets nor by the existing iron stores of many women; therefore the use of 30-60 mg of supplemental iron is recommended. Iron needs during lactation are not substantially different from those of non-pregnant women, but continued supplementation of the mother for 2-3 months after parturition is advisable in order to replenish stores depleted by pregnancy.

|           |                | Fat-Soluble Vitamins                      |                                      |                                     |                   | Water-Soluble Vitamins |                         |                                  |                                |                                    |                                       |
|-----------|----------------|-------------------------------------------|--------------------------------------|-------------------------------------|-------------------|------------------------|-------------------------|----------------------------------|--------------------------------|------------------------------------|---------------------------------------|
|           | Age<br>(years) | Vitamin A<br>( $\mu$ g R.E.) <sup>c</sup> | Vitamin D<br>( $\mu$ g) <sup>d</sup> | Vitamin E<br>(mg T.E.) <sup>e</sup> | Vitamin C<br>(mg) | Thiamin<br>(mg)        | Ribo-<br>flavin<br>(mg) | Niacin<br>(mg N.E.) <sup>f</sup> | Vitamin B <sub>6</sub><br>(mg) | Folacin <sup>g</sup><br>( $\mu$ g) | Vitamin B <sup>12</sup><br>( $\mu$ g) |
| Infants   | 0.0-0.5        | 420                                       | 10                                   | 3                                   | 35                | 0.3                    | 0.4                     | 6                                | 0.3                            | 30                                 | 0.5 <sup>h</sup>                      |
|           | 0.5-1.0        | 400                                       | 10                                   | 4                                   | 35                | 0.5                    | 0.6                     | 8                                | 0.6                            | 45                                 | 1.5                                   |
| Children  | 1-3            | 400                                       | 10                                   | 5                                   | 45                | 0.7                    | 0.8                     | 9                                | 0.9                            | 100                                | 2.0                                   |
|           | 4-6            | 500                                       | 10                                   | 6                                   | 45                | 0.9                    | 1.0                     | 11                               | 1.3                            | 200                                | 2.5                                   |
| Males     | 7-10           | 700                                       | 10                                   | 7                                   | 45                | 1.2                    | 1.4                     | 16                               | 1.6                            | 300                                | 3.0                                   |
|           | 11-14          | 1000                                      | 10                                   | 8                                   | 50                | 1.4                    | 1.6                     | 18                               | 1.8                            | 400                                | 3.0                                   |
|           | 15-18          | 1000                                      | 10                                   | 10                                  | 60                | 1.4                    | 1.7                     | 18                               | 2.0                            | 400                                | 3.0                                   |
|           | 19-20          | 1000                                      | 7.5                                  | 10                                  | 60                | 1.5                    | 1.7                     | 19                               | 2.2                            | 400                                | 3.0                                   |
|           | 23-50          | 1000                                      | 5                                    | 10                                  | 60                | 1.4                    | 1.6                     | 18                               | 2.2                            | 400                                | 3.0                                   |
|           | 51+            | 1000                                      | 5                                    | 10                                  | 60                | 1.2                    | 1.4                     | 16                               | 2.2                            | 400                                | 3.0                                   |
| Females   | 11-14          | 800                                       | 10                                   | 8                                   | 50                | 1.1                    | 1.3                     | 15                               | 1.8                            | 400                                | 3.0                                   |
|           | 15-18          | 800                                       | 10                                   | 8                                   | 60                | 1.1                    | 1.3                     | 14                               | 2.0                            | 400                                | 3.0                                   |
|           | 19-22          | 800                                       | 7.5                                  | 8                                   | 60                | 1.1                    | 1.3                     | 14                               | 2.0                            | 400                                | 3.0                                   |
|           | 23-50          | 800                                       | 5                                    | 8                                   | 60                | 1.0                    | 1.2                     | 13                               | 2.0                            | 400                                | 3.0                                   |
|           | 51+            | 800                                       | 5                                    | 8                                   | 60                | 1.0                    | 1.2                     | 13                               | 2.0                            | 400                                | 3.0                                   |
| Pregnant  |                | +200                                      | +5                                   | +2                                  | +20               | +0.4                   | +0.3                    | +2                               | +0.6                           | +400                               | +1.0                                  |
| Lactating |                | +400                                      | +5                                   | +3                                  | +40               | +0.5                   | +0.5                    | +5                               | +0.5                           | +100                               | +1.0                                  |

<sup>c</sup>Retinol equivalents. 1 Retinol equivalent = 1 retinol or 6 $\mu$ g carotene. See text for calculation of vitamin A activity of diets as retinol equivalents.

<sup>d</sup>As cholecalciferol. 10 $\mu$ g cholecalciferol = 400 I.U. vitamin D.

<sup>e</sup> $\alpha$ -tocopherol equivalents. 1 mg d- $\alpha$ -tocopherol = 1  $\alpha$  T.E. See text for variation in allowances and calculation of vitamin E activity of the diet as  $\alpha$ -tocopherol equivalents.

<sup>f</sup>1 NE (niacin equivalent) is equal to 1 mg of niacin or 60 mg of dietary tryptophan.

<sup>g</sup>The folacin allowances refer to dietary sources as determined by *Lactobacillus casei* assay after treatment with enzymes ("conjugases") to make polyglutamyl forms of the vitamin available to the test organism.

<sup>h</sup>The RDA for vitamin B<sup>12</sup> in infants is based on average concentration of the vitamin in human milk. The allowances after weaning are based on energy intake (as recommended by the American Academy of Pediatrics) and consideration of other factors such as intestinal absorption; see text.

MEAN HEIGHTS AND WEIGHTS  
and  
RECOMMENDED ENERGY INTAKE

| <u>Category</u> | <u>Age</u> | <u>Weight</u> |      | <u>Height</u> |      | <u>Energy Needs (with range)</u> |        |
|-----------------|------------|---------------|------|---------------|------|----------------------------------|--------|
|                 | (years)    | (kg)          | (lb) | (cm)          | (in) | (kcal)                           | (MJ)   |
| Infants         | 0.0-0.5    | 6             | 13   | 60            | 24   | kgx115(95-145)                   | kgx.48 |
|                 | 0.5-1.0    | 9             | 20   | 71            | 28   | kgx105(80-135)                   | kgx.44 |
| Children        | 1- 3       | 13            | 29   | 90            | 35   | 1300 (900-1800)                  | 5.5    |
|                 | 4- 6       | 20            | 44   | 112           | 44   | 1700 (1300-2300)                 | 7.1    |
|                 | 7-10       | 28            | 62   | 132           | 52   | 2400 (1650-3300)                 | 10.1   |
| Males           | 11-14      | 45            | 99   | 157           | 62   | 2700 (2000-3700)                 | 11.3   |
|                 | 15-18      | 66            | 145  | 176           | 69   | 2800 (2100-3900)                 | 11.8   |
|                 | 19-22      | 70            | 154  | 177           | 70   | 2900 (2500-3300)                 | 12.2   |
|                 | 23-50      | 70            | 154  | 178           | 70   | 2700 (2300-3100)                 | 11.3   |
|                 | 51-75      | 70            | 154  | 178           | 70   | 2400 (2000-2800)                 | 10.1   |
|                 | 76+        | 70            | 154  | 178           | 70   | 2050 (1650-2450)                 | 8.6    |
| Females         | 11-14      | 46            | 101  | 157           | 62   | 2200 (1500-3000)                 | 9.2    |
|                 | 15-18      | 55            | 120  | 163           | 64   | 2100 (1200-3000)                 | 8.8    |
|                 | 19-22      | 55            | 120  | 163           | 64   | 2100 (1700-2500)                 | 8.8    |
|                 | 23-50      | 55            | 120  | 163           | 64   | 2000 (1600-2400)                 | 8.4    |
|                 | 51-75      | 55            | 120  | 163           | 64   | 1800 (1400-2200)                 | 7.6    |
|                 | 76+        | 55            | 120  | 163           | 64   | 1600 (1200-2000)                 | 6.7    |
| Pregnancy       |            |               |      |               |      | +300                             |        |
| Lactation       |            |               |      |               |      | +500                             |        |



DAILY FOOD INTAKE RECORD FOR \_\_\_\_\_

(Name)



To assess your nutrient intake, keep a record of all the foods you eat and drink, and analyze it in terms of nutrient composition to help you become aware of the nutrients you have consumed. Some tips to remember when keeping a food record include:

1. Record the amount of food eaten as accurately as possible: Learn to estimate the amounts of food to the nearest cup, fraction of cup, tablespoon, ounce or other common measure. If you are unsure about how much is in one cup and other measures try measuring out the amount onto a plate to get an idea of the amount. This should help you make better estimates on the amount of food you have eaten.
2. Break down mixed food dishes by major ingredients if not listed in a Table of Food Composition. For example, a tuna casserole might have 1/4 cup tuna, 3/4 cup noodles and 1/2 cup cheese sauce. The same would be true for sandwiches, soups, stews, salads, etc.
3. As foods are recorded, indicate how they were prepared: fried, baked, breaded, creamed, etc. Look up the nutrient information according to the method in which the food was prepared.



4. Record foods as soon after they are eaten, if possible. Record all foods eaten during the day, this includes snacks, drinks, or other foods eaten between meals.
5. A food record of this type needs to be kept for at least three days, but up to a week is more desirable. This would give you a better over-all picture of your food intake.

Directions for use:



1. Record all foods eaten on the form "Nutritive Values of Foods Eaten for Day \_\_\_\_." Forms are included for three days. If you keep a record for a longer period of time you will need to make more forms.
2. Use a chart or table to give your nutritive values of the foods eaten. Such charts and tables are found in any one of the references listed at the end of this section.
3. After you have kept a record for three to seven consecutive days, figure the average. Compare the average to the Recommended Daily Average (RDA) which is found on page 37. A summary page is provided for you to compute the averages, and record the RDA and find the differences.



④

4. Evaluate your food intake record by answering these questions.

a) What are the reasons you would give for your RDA shortages and/or excesses of the nutrients?

b) What foods could you include in your diet that would help you overcome these shortages? Be sure to list those foods you are willing to eat.

NUTRITIVE VALUES OF FOODS EATEN FOR DAY \_\_\_\_\_.

Directions: Record the foods eaten during one day below. You will need to complete one of these for each of the three days.

| FOOD        | Amt. in Measure | Food Energy Calories | Protein (gm) | Vit. A. (I.U.) | Ascorbic Acid (mg) | Thiamine (mg) | Riboflavin (mg) | Niacin (mg) | Calcium (mg) | Iron (mg) |
|-------------|-----------------|----------------------|--------------|----------------|--------------------|---------------|-----------------|-------------|--------------|-----------|
| Breakfast   |                 |                      |              |                |                    |               |                 |             |              |           |
| Lunch       |                 |                      |              |                |                    |               |                 |             |              |           |
| Dinner      |                 |                      |              |                |                    |               |                 |             |              |           |
| Snacks      |                 |                      |              |                |                    |               |                 |             |              |           |
| Daily Total |                 |                      |              |                |                    |               |                 |             |              |           |

# NUTRITIVE VALUES OF FOODS EATEN FOR DAY \_\_\_\_\_.

Directions: Record the foods eaten during one day below. You will need to complete one of these for each of the three days.

| FOOD        | Amt. in Measure | Food Energy Calories | Protein (gm) | Vit. A. (I.U.) | Ascorbic Acid (mg) | Thiamine (mg) | Riboflavin (mg) | Niacin (mg) | Calcium (mg) | Iron (mg) |
|-------------|-----------------|----------------------|--------------|----------------|--------------------|---------------|-----------------|-------------|--------------|-----------|
| Breakfast   |                 |                      |              |                |                    |               |                 |             |              |           |
| Lunch       |                 |                      |              |                |                    |               |                 |             |              |           |
| Dinner      |                 |                      |              |                |                    |               |                 |             |              |           |
| Snacks      |                 |                      |              |                |                    |               |                 |             |              |           |
| Daily Total |                 |                      |              |                |                    |               |                 |             |              |           |

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NUTRITIVE VALUES OF FOODS EATEN FOR DAY \_\_\_\_\_.

Directions: Record the foods eaten during one day below. You will need to complete one of these for each of the three days.

| FOOD        | Amt. in Measure | Food Energy Calories | Protein (gm) | Vit. A. (I.U.) | Ascorbic Acid (mg) | Thiamine (mg) | Riboflavin (mg) | Niacin (mg) | Calcium (mg) | Iron (mg) |
|-------------|-----------------|----------------------|--------------|----------------|--------------------|---------------|-----------------|-------------|--------------|-----------|
| Breakfast   |                 |                      |              |                |                    |               |                 |             |              |           |
| Lunch       |                 |                      |              |                |                    |               |                 |             |              |           |
| Dinner      |                 |                      |              |                |                    |               |                 |             |              |           |
| Snacks      |                 |                      |              |                |                    |               |                 |             |              |           |
| Daily Total |                 |                      |              |                |                    |               |                 |             |              |           |

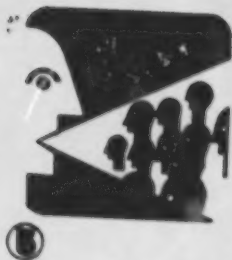


# SUMMARY OF NUTRIENTS EATEN FOR THREE DAYS

Directions: Record daily totals from Form II. Average and calculate the differences.

|                                                                                              | Food<br>Energy<br>Calories | Protein<br>(gm) | Vit. A<br>(I.U.) | Ascorbic<br>Acid<br>(mg) | Thiamine<br>(mg) | Riboflavin<br>(mg) | Niacin<br>(mg) | Calcium<br>(mg) | Iron<br>(mg) |
|----------------------------------------------------------------------------------------------|----------------------------|-----------------|------------------|--------------------------|------------------|--------------------|----------------|-----------------|--------------|
| Day I Totals                                                                                 |                            |                 |                  |                          |                  |                    |                |                 |              |
| Day II Totals                                                                                |                            |                 |                  |                          |                  |                    |                |                 |              |
| Day III Totals                                                                               |                            |                 |                  |                          |                  |                    |                |                 |              |
| Three Day Total                                                                              |                            |                 |                  |                          |                  |                    |                |                 |              |
| Average of<br>Three Day Totals                                                               |                            |                 |                  |                          |                  |                    |                |                 |              |
| RDA Amount<br>(from pg. 34 of<br>text) Be sure<br>to use the<br>correct age<br>group for you |                            |                 |                  |                          |                  |                    |                |                 |              |
| Differences<br>(Indicate + or<br>- of RDA)                                                   |                            |                 |                  |                          |                  |                    |                |                 |              |

## Other Nutritional Assessment Devices



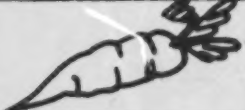
Included in this section on nutritional assessment are some examples of other devices which could be used. These instruments for the various age levels could be used as are or could be adapted to fit your particular situation. High School students could keep a record similar to that which you kept on yourself.

NAME \_\_\_\_\_

DATE \_\_\_\_\_

# PRE/POST ASSESSMENT OF FOOD HABITS

DIRECTIONS: PLACE AN X IN THE BOX UNDER THE FACE WHICH BEST TELLS HOW YOU FEEL ABOUT THIS FOOD.

|           |                                                                                     | <br>DISLIKE | <br>DON'T KNOW | <br>LIKE |
|-----------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| MILK      |    |                                                                                              |                                                                                                  |                                                                                             |
| APPLE     |    |                                                                                              |                                                                                                  |                                                                                             |
| HAMBURGER |    |                                                                                              |                                                                                                  |                                                                                             |
| BREAD     |   |                                                                                              |                                                                                                  |                                                                                             |
| CARROTS   |  |                                                                                              |                                                                                                  |                                                                                             |
| EGG       |  |                                                                                              |                                                                                                  |                                                                                             |
| ICE CREAM |  |                                                                                              |                                                                                                  |                                                                                             |
| FISH      |  |                                                                                              |                                                                                                  |                                                                                             |
| COOKIES   |  |                                                                                              |                                                                                                  |                                                                                             |

Name \_\_\_\_\_

Date \_\_\_\_\_

# PRE/POST ASSESSMENT OF FOOD HABITS

Directions: Place an X in the box under the face which best tells how you feel about this food.

| Food              | <br>Like a Little | <br>Like Very Much | <br>Dislike a Little | <br>Dislike Very Much | <br>Do Not Know<br>Offered - Re-<br>fused to Eat |
|-------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Milk              |                                                                                                    |                                                                                                     |                                                                                                       |                                                                                                         |                                                                                                                                     |
| Chili             |                                                                                                    |                                                                                                     |                                                                                                       |                                                                                                         |                                                                                                                                     |
| Spinach           |                                                                                                    |                                                                                                     |                                                                                                       |                                                                                                         |                                                                                                                                     |
| Tacos             |                                                                                                    |                                                                                                     |                                                                                                       |                                                                                                         |                                                                                                                                     |
| Chicken           |                                                                                                    |                                                                                                     |                                                                                                       |                                                                                                         |                                                                                                                                     |
| Oranges           |                                                                                                    |                                                                                                     |                                                                                                       |                                                                                                         |                                                                                                                                     |
| Broccoli          |                                                                                                    |                                                                                                     |                                                                                                       |                                                                                                         |                                                                                                                                     |
| Rice              |                                                                                                    |                                                                                                     |                                                                                                       |                                                                                                         |                                                                                                                                     |
| Ice Cream         |                                                                                                    |                                                                                                     |                                                                                                       |                                                                                                         |                                                                                                                                     |
| Eggs              |                                                                                                    |                                                                                                     |                                                                                                       |                                                                                                         |                                                                                                                                     |
| Liver             |                                                                                                    |                                                                                                     |                                                                                                       |                                                                                                         |                                                                                                                                     |
| Oatmeal           |                                                                                                    |                                                                                                     |                                                                                                       |                                                                                                         |                                                                                                                                     |
| Whole Wheat Bread |                                                                                                    |                                                                                                     |                                                                                                       |                                                                                                         |                                                                                                                                     |
| Chop Suey         |                                                                                                    |                                                                                                     |                                                                                                       |                                                                                                         |                                                                                                                                     |

# EATING HABITS QUESTIONNAIRE

Name \_\_\_\_\_

Directions: Fill out this questionnaire at the end of each day, recording all food items eaten during the course of the day. At the end of the week, total the number of times each food has been eaten, in the column marked +. Add other foods eaten, but not already listed in the blank spaces provided in each food category.

| VEGETABLES        | S | M | T | W | T | F | S | + | MILK/<br>CHEESE | S | M | T | W | T | F | S | + | BREADS/<br>CEREALS | S | M | T | W | T | F | S | + |
|-------------------|---|---|---|---|---|---|---|---|-----------------|---|---|---|---|---|---|---|---|--------------------|---|---|---|---|---|---|---|---|
| Broccoli          |   |   |   |   |   |   |   |   | Milk            |   |   |   |   |   |   |   |   | Bread, Rolls       |   |   |   |   |   |   |   |   |
| Tomatoes          |   |   |   |   |   |   |   |   | Ice Cream       |   |   |   |   |   |   |   |   | Crackers           |   |   |   |   |   |   |   |   |
| Carrots           |   |   |   |   |   |   |   |   | Pudding         |   |   |   |   |   |   |   |   | Rice               |   |   |   |   |   |   |   |   |
|                   |   |   |   |   |   |   |   |   |                 |   |   |   |   |   |   |   |   |                    |   |   |   |   |   |   |   |   |
|                   |   |   |   |   |   |   |   |   |                 |   |   |   |   |   |   |   |   |                    |   |   |   |   |   |   |   |   |
|                   |   |   |   |   |   |   |   |   |                 |   |   |   |   |   |   |   |   |                    |   |   |   |   |   |   |   |   |
| FRUITS/<br>JUICES |   |   |   |   |   |   |   |   | MEATS           |   |   |   |   |   |   |   |   | OTHER              |   |   |   |   |   |   |   |   |
| Orange Juice      |   |   |   |   |   |   |   |   | Hamburger       |   |   |   |   |   |   |   |   | Candy              |   |   |   |   |   |   |   |   |
| Dried Fruit       |   |   |   |   |   |   |   |   | Liver           |   |   |   |   |   |   |   |   | Potato Chips       |   |   |   |   |   |   |   |   |
| Cantaloupe        |   |   |   |   |   |   |   |   | Peanut Butter   |   |   |   |   |   |   |   |   | Mayonnaise         |   |   |   |   |   |   |   |   |
|                   |   |   |   |   |   |   |   |   |                 |   |   |   |   |   |   |   |   |                    |   |   |   |   |   |   |   |   |
|                   |   |   |   |   |   |   |   |   |                 |   |   |   |   |   |   |   |   |                    |   |   |   |   |   |   |   |   |



# DAILY FOOD INTAKE RECORD

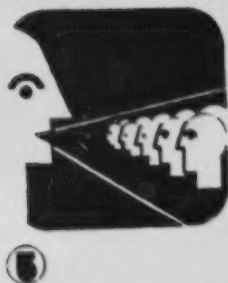
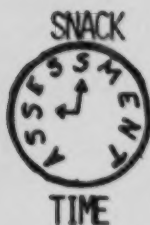
Name \_\_\_\_\_ Age \_\_\_\_\_

Date \_\_\_\_\_ Sex \_\_\_\_\_

## Nutrient Content of Food Eaten

| Vitamin A<br>RDA: | Vitamin C<br>RDA: | Iron<br>RDA: | Calcium<br>RDA: |
|-------------------|-------------------|--------------|-----------------|
|-------------------|-------------------|--------------|-----------------|

| Food Eaten For: | Amount: | How Prepared: |  |  |  |  |
|-----------------|---------|---------------|--|--|--|--|
| Breakfast       |         |               |  |  |  |  |
| Lunch           |         |               |  |  |  |  |
| Dinner          |         |               |  |  |  |  |
| Snacks          |         |               |  |  |  |  |



Directions: List the snack foods you have eaten today. Look up each snack food to see what nutrients are found in the snack you have eaten. Record your findings in the space below. (In this sample the snacks and figures are already included.)

| FOOD          | AMOUNT               | CALORIES | IRON (mg) | CALCIUM (mg) | ASCORBIC ACID (mg) | VITAMIN A (ug R.E.) |
|---------------|----------------------|----------|-----------|--------------|--------------------|---------------------|
| Cheese Cube   | $\frac{1}{2}$ cu.in. | 34.      | .1        | 64.5         | 0                  | 34.5                |
| Pretzel Stick | 1                    | 1.       | 0         | .1           | 0                  | 0                   |
| Wheat Sticks  | 1                    | 72.1     | 1.02      | 6.0          | .45                | 56.4                |
| Apple Juice   | 4 oz.                | 60.      | .6        | 10.          | 1.                 | 0                   |
| TOTALS        |                      | 167.1    | 1.72      | 70.6         | 1.45               | 303                 |

Recommended Daily Requirements for:

|         |       |      |      |        |      |      |
|---------|-------|------|------|--------|------|------|
| Child   | 4-6   | 1700 | 10.0 | 800.0  | 45.0 | 500  |
| Child   | 7-10  | 2400 | 10.0 | 800.0  | 45.0 | 700  |
| Males   | 11-14 | 2700 | 18.0 | 1200.0 | 50.0 | 1000 |
|         | 15-18 | 2800 | 18.0 | 1200.0 | 60.0 | 1000 |
|         | 23-50 | 2700 | 10.0 | 800.0  | 60.0 | 1000 |
| Females | 11-14 | 2200 | 18.0 | 1200.0 | 50.0 | 800  |
|         | 15-18 | 2100 | 18.0 | 1200.0 | 60.0 | 800  |
|         | 23-50 | 2000 | 18.0 | 800.0  | 60.0 | 800  |

How did my snack rate? Circle one ribbon.



EXCELLENT

(Rated high in 3+)



GOOD

(Rated high in 2+)



FAIR

(Rated high in 1+)

## LUNCH QUESTIONNAIRE

Directions: You have just eaten lunch and we would like to know how much you ate and if you liked your lunch. Circle your answer.

Where did you eat lunch today?

School Lunch

Sack lunch at school

Home

Eat out

How much of your lunch did you eat?

All

Most

Half

A little

None

What part of your lunch did you give away or trade?

Milk

Sandwich

Fruit

Vegetable

Meat or Main Dish

Dessert

What part of your lunch did no one eat?

Milk

Sandwich

Fruit

Vegetable

Meat or Main Dish

Dessert

Please put an (x) in the box under the face which best tells how you felt about your lunch. You are the only one who can tell us what you like.



Disliked very much.

☐

Disliked a little.

☐

Did not care.

☐

Liked a little.

☐

Liked very much.

☐



Arlin, M. *The Science of Nutrition*, 2nd ed. New York: MacMillan Publishing Co., Inc., 1977.

Fomon, Samuel J. *Nutritional Disorders of Children, Prevention, Screening and Follow-up*. United States Department of Health, Education, and Welfare, 1977.

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Martin, Ethel Austin and Virginia A. Beal. *Robert's Nutrition Work With Children*. Fourth edition, The University of Chicago Press: Chicago, Illinois, 1978.

Martin, E. A. and A. A. Coolidge. *Nutrition in Action*, Fourth edition, New York: Holt, Rinehart, and Winston, 1978.

Pipes, Peggy L. *Nutrition in Infancy and Childhood*. St. Louis: The C. V. Mosby Company, 1977.

Whitney, E. and E. M. Hamilton. *Understanding Nutrition*. St. Paul: West Publishing Co., 1977.



## DEVELOPING SOCIAL SURVEYS (A Learning Module)

developed by

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### INTRODUCTION

Communities are rich with a great variety of resources which can be used in teaching. These include agencies, organizations, programs, and institutions whose sole commitment is serving individuals, homes, and families in one way or another. They provide a storehouse of information on people living in the community, their concerns, their problems, their hopes and their aspirations. (Hatcher and Halchin, 1973)

It is our job as teachers to use these resources for the benefit of our students. To do that we have to identify the resources available. Community surveys are an effective way to acquaint yourself with the people and services of your community.

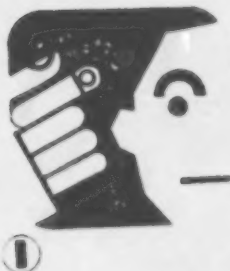
There are two basic purposes for surveys: 1) to obtain a broad overview of the community and 2) to study a specific problem. A broad overview would include information about the employment habits, shopping, educational and recreational facilities, churches, health, transportation, etc. An example of this type of survey is found on pages 105-106. This type of survey is useful in understanding the community. A survey to study a specific problem of major concern to the group is a more limited type of survey and is easily conducted with elementary and high



school students. (Any nutrition topic may be studied with this type of survey.) An example of this type of survey is found on pages 105 and 111.

Both types of surveys can be developed with this module. Preferably a combination survey that deals with locating nutrition resources available in your community and establishing some attitudes on nutrition education would be most beneficial. The process of developing, administering and interpreting surveys will be covered in this learning module. The written questionnaire type of survey will be developed because it can be adapted to the other types of surveys.

## LEARNING EXPERIENCE I: DEVELOPING A COMMUNITY SURVEY



**Objectives:** After completing the required activities :

1. Develop a survey useful in determining nutrition resources in your community.
2. Apply techniques useful in encouraging returns of the survey in the development of the survey form.

**Activities:**



1. Look at sample surveys that are available in your school library. Other examples are included on pages 105-106.
2. Read Study Guide A: Steps in Survey Design (pp. 74-75).
3. Using Form I: Survey Worksheet, complete steps 1-3 and 6-9 (p. 76).
4. Read Study Guide B: Developing a Questionnaire (pp. 79-81)
5. Read Study Guide C: Appropriate Format (pp. 85-86).
6. Complete part 5 of Form Survey Worksheet (p. 76).
7. Using Form II: Finished Survey Questionnaire, (p.87 ) transfer your questions using appropriate format and techniques that encourage returns from Form I: Survey Worksheet (p.76).



**Evaluation:**

1. Have Forms I and II checked by the instructor.

## STUDY GUIDE A: STEPS IN SURVEY DESIGN



2

Before starting a survey, there are many preplanning steps that are necessary for an organized and successful survey. According to Erdos (1970), the following are the logical and essential parts of survey design.

1. Outline the problem. Decide on a problem by looking at your class for a need. In this module we will be looking for community resources you can bring into your classroom. Ask yourself the basic goals you wish to achieve. What made you think of conducting a survey? Will a survey make a real contribution toward solving the problem?
2. Define the objectives. These objectives should be specific and well defined. They may be teacher or class objectives and ultimately the survey objectives.
3. Investigate existing research. Look through the library, Chamber of Commerce, and talk with other teachers to see if anyone else has completed a community survey. If a survey is found, examine the results and date completed. You may be able to adapt parts of such a survey to fit your needs.
4. Define the scope and sample. To do this compile a complete list of all agencies and organizations that fit into your selected area to be polled. Select a sample or group to be polled if your time and funds do not allow you to poll everyone.

5. Decide on the survey method. Your objectives, funds, and size of sample will be the most important factors in making this decision. Your two basic choices are interviews or questionnaires. This topic is discussed further in Study Guide D (pp.91-92).
6. Decide who will conduct the survey. Will you be conducting the survey or your class or a company trained in conducting surveys? This decision will determine the method of conducting the survey, as well as the interpretation.
7. Establish the type of tabulation, analysis and report desired. Before constructing the questions, it is helpful to think through the final format for your data. The actual process may be determined while writing the questions.
8. Set up a timetable. List each specific operation and allow sufficient time to complete the whole task. This will alleviate many problems later in reaching the completion deadline.
9. Estimate the cost. This is the last step in planning because it is dependent upon the other steps. The size of the available budget, if any, should be established before you begin. If this is a class project, consider paper and copying, postage, gas, etc..

In general, . . . think through every step of a survey before actually developing one. The greatest help you can have in this planning is to conduct a pilot study in which you use your instrument with a small group. (Erdos, 1970)

Form I: SURVEY WORKSHEET



Complete this form for your class and community.  
Use Study Guide A for help.

Problem:

Objective(s):

Existing Research:

Scope and Sample: (Answered after completing Study Guide E, Learning Experience I)

Survey Method: (Answered after completing Study Guide B and C, Learning Experience I)

Questionnaire Questions:

Section Division:



Conducted by:

Analysis:

Time:

Cost:

## STUDY GUIDE B: DEVELOPING A QUESTIONNAIRE



How much freedom should the participants be given in answering questions? The answer lies in the purpose of the survey and the age and knowledge of the participants. There are two basic choices when writing a questionnaire, open or closed responses. The following are examples of each option.

### OPEN RESPONSE

- Q 1. There has been a lot of concern about nutrition and its relationship to health. During the last year have you or anyone living with you had any nutrition related problem? (Warwick, 1975)

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### CLOSED RESPONSE

- Q 1. There has been a lot of concern about nutrition and its relationship to health lately. Here is a list of nutrition problems that people have. In the past year has anything like this happened to you or anyone living with you? (Warwick, 1975)

- ( ) obesity
- ( ) lifeless hair
- ( ) poor skin
- ( ) tiredness
- ( ) inability to perform on job
- ( ) dental caries
- ( ) other (specify) \_\_\_\_\_
- ( ) Nothing (skip to Q 4)

### Guidelines in Question Writing

When you begin writing a questionnaire, define the problem to be tackled by the survey. This will help decide what questions to ask. The trick is determining how to ask just what is needed--not everything that sounds interesting. Begin with a list of questions, keeping in mind what information you would like to know from the participant. You then need to examine every question, and exclude any that are not strictly relevant to the survey's objectives. (Moser, 1971) Keep in mind the survey should be practical. Ask only questions the participants are able to answer. You must also be cautious of asking questions which would invade the privacy of one's personal life.

To help in writing your questions, there are eight basic guidelines. These will help you "to obtain complete and accurate information that is relevant to the purposes of the study, to maintain the cooperation and goodwill of the respondent, and to show respect for his dignity and privacy." (Warwick, 1975)

1. Are the words simple, direct, and familiar to all respondents? Avoid technical jargon or concepts familiar only to those with special training, slang, and talking down to participants.
2. Is the question as clear and specific as possible? Indefinite words such as--often, occasionally, and usually--should be avoided.
3. Are any items "double-barreled?" This presents a problem because you are never certain what part is being answered. An

example is: Do you prefer a. well-cooked soft vegetables, or  
b. under-cooked firm vegetables? \_\_\_\_ a. \_\_\_\_ b.

4. Are questions leading or loaded? Loading takes place in several ways a) partial mention of the alternatives; b) using emotionally charged words; c) appeals or threats to self-esteem such as honest or fair; and d) personalization.
5. Is the question applicable to all the respondents? Questions such as 'what is your present occupation' assumes you are working. To avoid this, use a device known as a filter, skip pattern or pivot question. This allows you to determine whether or not a person qualifies before answering the remaining questions.
6. Will the answers be influenced by response styles? When questions are expressed as agree-disagree or yes-no, participants have a tendency to choose positive responses. By using rating devices the position bias is greatly lessened.
7. Can the item be shortened with no loss of meaning? Survey questions should be short and clear.
8. Does the question read well? The key idea should come last. This prevents the participant from "jumping the gun."

### Question Sequence

By using expectations, logic, and limitations when ordering your questions, there is less time spent by the participant and the analyzer flipping pages. "The questions should flow in a clear and orderly sequence, with precise instructions on how to move ahead." (Warwick, 1975) There are three aspects of question sequence most likely to affect the success of the questionnaire:

1. Opening question
2. Flow of items
3. Location of sensitive questions

The first question should excite the participant's interest and build confidence in his/her ability to answer the questions. Do not begin with age, sex, marital status or other personal topics, but ask these questions with caution elsewhere on the questionnaire. Instead, begin with a more conversational and positive question. An example would be: We are interested in people's nutrition attitudes. Would you say that you and your family are

- ( ) very conscious of nutrition
- ( ) sometimes conscious of nutrition
- ( ) pay little attention to nutrition
- ( ) not interested in nutrition

The questions should flow in a logical order and give indications of the overall purpose of the study. Transitional questions should be used to introduce new topics. These may be brief, such as: To get an accurate financial picture all over the country, we need to know the income of all the families participating. The flow of questions may also guide individuals gradually into embarrassing topics.



The location of sensitive questions has two basic guidelines. First, it should be located where it is the most meaningful in the context of other questions. Second, it should be gradually introduced with less threatening material. Without giving some thought to the placement of these questions, many participants will skip these important questions.

## STUDY GUIDE C: APPROPRIATE FORMAT



When you prepare a survey, beware, because you are not always interested in the same things as the participant. To help bridge this difference, a cover letter that is short and excites interest is needed. A good letter is personal, explains the purpose, importance, and benefits. It answers all possible questions and encourages a reply. This is a difficult task but can make all the difference in the number of replies. An example is on page 103.

The second concern is the transition from the letter to the questionnaire. A carefully constructed title is useful for a smooth transition. Titles may also be stated so they are "1) appealing to the respondent's ego, 2) emphasizing the subject, 3) underlining the importance of the research, and 4) emphasizing the tie between the researcher and the respondent." (Erdos, 1970) In choosing this all important title, make sure it is accurate and consider if the title will bias anyone.

The introductory question is always important, except in cases where the participants find the whole subject matter of great importance. This question is also valuable in bridging the gap between the cover letter and the questionnaire. It should always have a personal involvement for the participant and be easily answered. Of course, the best introduction is an interesting question that deals with the objectives of the survey and starts the participants off on the right foot.

Once you have the participant's interest, keep it by using an easily read format. The layout should give the impression of a neat printed page that is easy to read and easy to fill out.

The page should never be overcrowded; it should provide decent margins with space to separate solidly printed blocks, and the often unavoidable tabular form (multiple columns of boxes) should be kept to a minimum. One of the most unfortunate impressions a questionnaire can make, is to remind people of an income tax form. (Erdos, 1970)

Clear directions as to where the answer is to be recorded is necessary. Make sure it is obvious which box belongs to which answer. The following is an example of poor layout. (Erdos, 1970)

Under 25 years ☐ 25 to 34 ☐ 35 to 44 ☐ 45 to 54 ☐ 55 to 64 ☐ 65 & + ☐

A proper layout would have been: (Erdos, 1970)

- ☐ under 25 years
- ☐ 25 to 34 years
- ☐ 35 to 44 years
- ☐ 45 to 54 years
- ☐ 55 to 64 years
- ☐ 65 and over

Group questions into sections with separate headings that are descriptive and interesting. These sections can start with a question numbered one. This keeps the numbering low and impresses the fact that this is a simple little questionnaire. Your purpose in the layout is to keep the participant going so they answer all the questions.

The last page should include a "Thank you" note. If comments can be useful, they may be requested simply without adding to the length of the questionnaire.

FORM II: FINISHED SURVEY



This will be your finished questionnaire. Complete each section according to the directions in Study Guides A, B, and C.

Title:

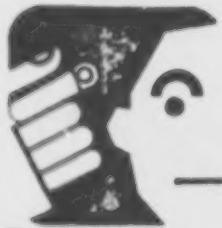
Objective(s):

Introductory Question:

Questions grouped into sections with appropriate subtitles:

Thank you note:

## LEARNING EXPERIENCE II: ADMINISTERING A COMMUNITY SURVEY



1

### Objective:

After completing the activities, plan the steps in administering your survey.

### Activities:



2

1. Read Study Guide D: Ways of Administering Surveys (pp. 91-92).
2. Choose the administration strategy that best fits your needs by placing an X in front of the appropriate strategy (p.92).
3. Select the people or agencies to be polled. Record your answer on Form I: Survey Worksheet (p.76) under number four: Sample and Scope. A list of possible agencies is provided on Study Guide E: Sources for Your Participants (p.93)
4. Using the administration technique that best fits your needs (from Study Guide D) plan the steps you will use in administering your survey. Use Form III: Administering Your Survey to record your answers (p. 95).

### Optional Activity:

1. Read sources on sampling design.

### Evaluation:

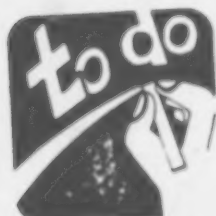


4

1. Recheck your list of possible participants and sample. Add any others that you can think of.
2. Have Form III: Administering Your Survey (p.95) checked by the instructor.



## STUDY GUIDE D: WAYS OF ADMINISTERING SURVEYS



In this module you have been developing a questionnaire that could be adapted to fit various needs. When developing a survey, begin by choosing your strategy. There are four basic types of sample surveys. They include "a questionnaire administered by an interviewer in the presence of the respondent, the telephone interview, the mail questionnaire, and the self-administered questionnaire completed in group sessions, as in a classroom or office." (Warwick, 1975) Each has its advantages and disadvantages that should be weighed before writing a single question.

To simplify the task, we will group surveys into two methods, one using an interviewer either in person or on the phone, and the second using a questionnaire either by mail or in person. The following is a listing of some of the advantages and disadvantages of both methods.

### Interview

#### Advantages

- Motivation of the respondent
- Permissive atmosphere for discussion
- Complete and accurate answers
- Greater flexibility
- Clarify ambiguous questions
- Not dependent on literacy, educational level or visual acuity
- Control over sequence of questions

#### Disadvantages

- Expensive
- Finding qualified interviewers and keeping them
- Less confidentiality
- Time it takes to do personal interview

### Questionnaire

#### Advantages

Group sessions have higher completion rate because of motivation  
Less expensive  
Can be used for highly personal or embarrassing topic  
Use of rating scales, checklists or other forms of measurement

#### Disadvantages

Low completion rate with mail survey  
Brief and straightforward  
No flexibility  
Follow-up activities, such as phone calls, letters and postcards are sent as reminders

The interview method is the more appropriate strategy when a survey covers a highly diverse population, a questionnaire is long and complex, or there are open-ended questions. The telephone interview has fewer advantages than a face to face interview but depending on your needs still may be more useful than a self-administered questionnaire. Weigh both sides to see which fits into your classroom and budget.

Check the strategy that best fits your needs.

- \_\_\_ personal interview
- \_\_\_ phone interview
- \_\_\_ mail questionnaire
- \_\_\_ self-administered questionnaire

## STUDY GUIDE E: SOURCES FOR YOUR PARTICIPANTS

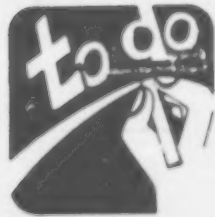


Begin by searching the classified pages of the newspaper, yellow pages in the phone book, the public library, school administrators, United Way and Chamber of Commerce, and clergy for programs, agencies, associations, organizations, and institutions which are located in your community. (Hatcher, 1973) The following is a sample list of agencies to look for.

|                         |                                  |
|-------------------------|----------------------------------|
| Red Cross               | Day-Care centers                 |
| Meal-on-Wheels          | Youth centers                    |
| Rehabilitation centers  | Homes for unwed mothers          |
| Homemaker Aide programs | Neighborhood centers             |
| Consumer programs       | Nursing homes                    |
| YMCA and YWCA           | Hospitals                        |
| Girl Scouts, Boy Scouts | Food stamp programs              |
| Campfire Girls          | Public utility companies         |
| Social agencies         | Home Economics Extension Service |
| Senior citizen groups   | Professional groups              |

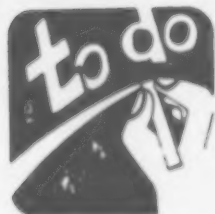
After developing a complete list of all persons (the scope), who could complete the questionnaire, a sample should be chosen, if time or money will not allow everyone to be polled. One thing to remember in selecting a sample is to make it representative of the total population. Various methods of sampling are possible and if you are not

familiar with how these are done, it would be best for you to check books on research, methodology or someone in your school system who could be of help to you.



Record this information on Form I, part four, on page 76.

FORM III: ADMINISTERING YOUR SURVEY



Record the steps you will follow in administering your survey:

Method:

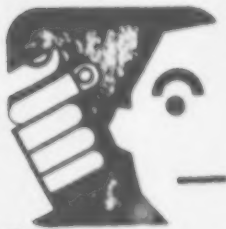
Helpers:

Steps:

Time Table:



### LEARNING EXPERIENCE III: INTERPRETING A COMMUNITY SURVEY



①

Objective: After completing the required activities

1. plan for interpretation of your survey
2. practice interpreting a sample community survey

#### Activities:



②

1. Read Study Guide F: Processing the Data (pp. 97-98).
2. Read Study Guide G: Analyzing and Interpreting (p. 99).
3. Complete Form IV: Planning Sheet for Interpretation of Survey (p. 100).
4. Study and interpret a Sample Community Survey page. Record your interpretation on Form V: Analysis Sheet for Sample Community Survey (p. 101).

#### Optional Activity:

1. Read resource books on statistical analysis.

#### Evaluation:



③

1. Look back over Form IV: Planning Sheet for completeness of interpretation. Add any additional information that will make this step easier.
2. Have instructor check Form IV and V.

## STUDY GUIDE F: PROCESSING THE DATA



The completed and returned questionnaire contains the answers you want to analyze. The form that it is in now is of little use. Each form must now be processed for its intended use. There are several steps in data processing and each is interrelated. The steps include: editing, coding and tabulation.

### Editing

Editing has three main purposes:

1. To improve the accuracy and clarity of the answers to specific questions and eliminate inconsistent or obviously wrong or hopelessly ambiguous replies.
2. To reduce "No Answers" or incomplete replies to some questions with the help of information found elsewhere on the questionnaire.
3. To make the entries clear, consistently uniform, and comprehensible to coders and key punch operators. (Erdos, 1970)

Editing should first be done immediately by the interviewer if the interview strategy is being used. The interviewer may recall any answers not recorded during the interview and note inconsistencies. Second, a person in charge should examine all surveys. "Frequent errors on questionnaire may point to inadequacies in the questionnaire, or in the instructions for its use." (Warwick, 1975)

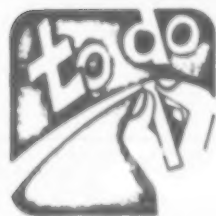
### Coding

"The purpose of coding in surveys is to classify the answers to a question into meaningful categories, so as to bring out their essential pattern." (Moser, 1971) In open-response questions, the answers must be translated into numbers if a computer is being used. When this is not the case, a grouping of various responses is necessary. The use of coding is also dependent upon the number of returns. In large surveys, coded material is often more efficient.

### Tabulation

If the editing and coding have been done properly, the tabulation is a simple process of counting the number of responses in the different categories. This process may be done manually, involving no technical knowledge or skill. Hand tabulation should not be attempted with more than 200 surveys. If more than 200 surveys are to be tabulated, a computer and key punch cards are beneficial. If this equipment is available, the benefits include faster tabulation, easy recall, less errors, and simple table development.

## STUDY GUIDE G: ANALYZING AND INTERPRETING



①

We have now reached the final stage of the survey. The first thing that needs to be done is to summarize the data into tables. This makes the interpretation a little easier. You will want to be comparing the different aspects of the survey with each other. An example would be comparing specific agencies with their services provided.

If no cross-tabulations are to be used the easiest way to chart tabulations is to take a separate sheet of paper for each question and list the various categories of answers with ample space for tallying.

The range of statistical methods applicable in survey analysis is too great to attempt to summarize here. For our use, we are going to look at survey interpretation in a non-statistical way. This method involves looking back at the problem, then at the data collected, and using the information to plan your curriculum.

For each question on the Community Resource Questionnaire, a comparison should be made to see how it applies to your classroom. When working with a problem, such as nutrition misconceptions, cross references to age or education and answers for each question should be compared.

When statistical analysis is not used, surveys can be interpreted in a practical way. Use the data collected as guidelines in planning for the use of the community in your classroom. Surveys can also be used to show a need among the community for more school-community interaction. Use the survey to increase your knowledge of the community as well as your students.

FORM IV: PLANNING SHEET FOR INTERPRETATION OF SURVEY



Complete this form using the information in Study Guides F and G (pp. 97-99) for your survey developed earlier.

Editing:

Time allowed:

Persons in charge:

Reasons for not using a completed questionnaire:

Coding: (Completed code when applicable)

Tabulating: Persons in charge:

Sample form:

Interpretation: Sample graph (if desired)

Results:

Uses:



FORM V: ANALYSIS SHEET SAMPLE COMMUNITY SURVEY



Using the information given in the Survey of Community Resources (pp. 105-106) identify 5 factors you should consider in planning a nutrition curriculum involving the community. Give reason for each factor listed.

①

1.

2.

3.

4.

5.

(Sample cover letter)

(Date)

Dear Mr. Cook:

Will you do us a favor?

We are conducting a survey to gather information on the resources available in our community. This information will be used in developing curriculum in your public school.

It will take but a few moments of your time to answer the simple questions on the enclosed form and we think you might find the experience pleasant.

Your answers will be kept confidential and used only in combination with others to get a composite picture. We enclose a stamped, self-addressed reply envelope for your convenience.

Thank you for your valuable assistance.

Sincerely, (Erdos, 1970)

(Sample 1)

## SURVEY OF COMMUNITY RESOURCES IN NUTRITION

Objective(s): To become aware of nutrition services and resources offered by social agencies in this community.

What do you feel is the greatest resource of this community? \_\_\_\_\_

### General Information

1. Name of your organization or agency Meals on Wheels
2. Age group usually served elderly
3. Purpose of your agency to serve hot nutritious lunches
4. Method of funding, if any varies with community
5. Hours 9:00 A.M. to 3:00 P.M.

### Your Organization's Services

6. Do you or your organization serve a nutrition need?  
☒ yes  
☐ no  
A. If yes, what are they? Nutritious meals to elderly
7. Do you or any member of your staff ever present nutrition information to outside groups?  
☐ yes  
☒ no  
A. If yes, what service do you offer? NA  
B. Would someone from your agency be able to present a nutrition related program during the school day?  
☐ yes  
☒ no  
C. If yes, who should be contacted and their telephone number?  
\_\_\_\_\_

(Sample 1, Cont.)

8. Does your organization have a volunteer force?

☒ yes

☐ no

A. If yes, what type service do they supply? deliver meals

B. Would student volunteers fit into your program?

☒ yes

☐ no

C. Are you interested in student volunteers to serve a nutrition need?

☒ yes

☐ no

9. Do you know of other available resources in the community which a teacher may use in nutrition classes? doctors and public health nurses and dieticians

"Thank you for your cooperation. We would appreciate any comments or suggestions you may care to make about any subject mentioned in the questionnaire. You may use a separate sheet of paper and return it with the questionnaire." (Erdos, 1970)

(Sample 2)

## COMMUNITY SURVEY

A community survey will be valuable to the teacher in planning a realistic nutrition program that will meet the needs and interests of the student. A community survey will help the teacher to make use of the available community resources. As you begin a teaching experience, use this survey to help you to become acquainted with the community.

### Community Background

1. Total Population 57,093
2. Arcestry of community inhabitants mixed (German, Scandinavian)
- A. What ethnic groups are found in the community? Black,  
American Indian and Spanish American
- B. Stability of population: (check one) stable \_\_\_ mobile X
- C. Population is: urban X rural \_\_\_
3. Check types of housing available: one family 73% two-family 12%  
multi-family 12% mobile homes 5% other \_\_\_\_\_
- A. Describe as many types of housing as you can see in the  
community. \_\_\_\_\_  
\_\_\_\_\_

### Influence of Other Communities

4. List important cities within a radius of 50 miles \_\_\_\_\_
5. What is the percent of the population of the community which you think is employed outside the community? 24%

## Community Industry

6. List the major industries in the community: Chevrolet, Westinghouse, Warner Gear, Delco Remy, Ball Corporation
7. List the major business in the community: Insurance, restaurants, utility company

8. Estimate percentage of people employed in the following major occupations:

12% Professional

20% Service

20% Factory

2% Farming

15% Business

3% Unskilled

10% Managerial

2% Other \_\_\_\_\_

9. Number of women who work outside the home: 65%

Facilities Available

10. Number of libraries available 1 public and 4 branches

11. Number of the following in the community: museums 1

social clubs 4 service or civic clubs 9

other \_\_\_\_\_

12. Number of parks available: private 1 public 6

13. Type of local government: Mayor X City Council X

Sheriff X Marshall \_\_\_\_\_ Other \_\_\_\_\_

14. Local services (check those available): police X legal aid \_\_\_\_\_

fire, regular or volunteer X local court X other \_\_\_\_\_

15. Special services (check those available): drug information X

special welfare X other \_\_\_\_\_

16. Approximate number of doctors and areas of specialization: \_\_\_\_\_

150, all medical areas

17. Number of hospitals 2

18. Number of medical clinics 2



19. Is there a Public Health Department available:   X   Does it  
provide free service?   X  

20. List any other community resources which will be of value to you  
in your teaching: \_\_\_\_\_

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(Sample 3)

WHAT'S YOUR NUTRITION I.Q.? (Moser and Kalton, 1971)

How much do you know about obtaining good nutrition for yourself or your family? If your knowledge is similar to that of a majority of American food shoppers, you probably share some widespread misconceptions about nutrition.

DIRECTIONS: Check the box that corresponds to your answer to the question. (Suggestion: if you use large numbers, it might be feasible to use computer answer sheet)

1. You'll get proper nourishment if you just eat a variety of foods.  
☐ True  
☐ False
2. People who don't eat meat, poultry, or fish can still stay healthy.  
☐ True  
☐ False
3. Food eaten between meals can be just as good for health as food eaten at regular meals.  
☐ True  
☐ False
4. Fresh vegetables cooked at home are always more nutritious than canned or frozen vegetables.  
☐ True  
☐ False
5. A high-protein, low carbohydrate diet is ideal for losing weight.  
☐ True  
☐ False

6. When dieting, avoid starchy foods, such as bread and potatoes.
- ☐ True
- ☐ False
7. If you weigh what you should, you're getting proper nourishment.
- ☐ True
- ☐ False
8. Taking extra vitamins beyond the RDA's won't give you more pep and energy.
- ☐ True
- ☐ False
9. Supplements of natural vitamins are better than supplements of synthetic vitamins.
- ☐ True
- ☐ False
10. Older people need the same amount of vitamins as younger people.
- ☐ True
- ☐ False
11. Food grown in poor, worn-out soil is lower in vitamins than food grown in rich soil.
- ☐ True
- ☐ False
12. Food produced with chemical fertilizers is just as nutritious as food grown with natural, organic fertilizer.
- ☐ True
- ☐ False

Name \_\_\_\_\_  
Date \_\_\_\_\_



## SOCIAL SURVEYS

**Objective:** To evaluate the completed survey planning sheets and final social survey developed.

④

**Directions:** Score your plans from 0 to the maximum points given for each characteristic.

| Criteria                                                                                        | Points Possible | Self Evaluation | Instructor Evaluation |
|-------------------------------------------------------------------------------------------------|-----------------|-----------------|-----------------------|
| <u>Problem</u>                                                                                  |                 |                 |                       |
| 1. The problem is stated as a problem.                                                          | 2               | _____           | _____                 |
| 2. The problem stated on Form I is reflective of the situation for which the survey is planned. | 3               | _____           | _____                 |
| <u>Objectives</u>                                                                               |                 |                 |                       |
| 3. The objective(s) are stated in behavioral terms.                                             | 2               | _____           | _____                 |
| 4. The survey fulfills the stated objective(s).                                                 | 5               | _____           | _____                 |
| <u>Survey Method</u>                                                                            |                 |                 |                       |
| 5. The survey method chosen is the most appropriate for the sample, time and funds available.   | 3               | _____           | _____                 |
| 6. Adequate knowledge of survey method is shown on Form III in the description of the method.   | 5               | _____           | _____                 |
| <u>Questionnaire</u>                                                                            |                 |                 |                       |
| 7. The title states purpose of the survey.                                                      | 2               | _____           | _____                 |

| Criteria                                                                               | Points Possible | Self Evaluation | Instructor Evaluation |
|----------------------------------------------------------------------------------------|-----------------|-----------------|-----------------------|
| 8. The title emphasizes the tie between the researcher and the respondent.             | 2               | _____           | _____                 |
| 9. The introductory question has personal involvement for the participant.             |                 |                 |                       |
| 10. The format for the questionnaire is easy to read.                                  | 3               | _____           | _____                 |
| 11. Questions are grouped into sections with appropriate subtitles.                    | 3               | _____           | _____                 |
| <u>Administering Survey</u>                                                            |                 |                 |                       |
| 12. The steps in administration include all steps necessary.                           | 7               | _____           | _____                 |
| 13. The time table is flexible.                                                        | 1               | _____           | _____                 |
| 14. The time table includes all steps listed with starting and completion dates.       | 4               | _____           | _____                 |
| <u>Interpretation</u>                                                                  |                 |                 |                       |
| 15. The sections that are necessary in the interpretation of the survey are completed. | 6               | _____           | _____                 |
| 16. Use of the results are explained in terms of personal and classroom use.           | 3               | _____           | _____                 |
| <u>Personal Value</u>                                                                  |                 |                 |                       |
| 17. You have become aware of the steps in writing a social survey.                     | 2               | _____           | _____                 |
| <hr/>                                                                                  |                 |                 |                       |
| Total                                                                                  | 55              | _____           | _____                 |

Comments:



Erdos, Paul L. *Professional Mail Surveys*. New York: McGraw-Hill Book Company, 1970.

*Consumers Report*. February, 1977, 78-80.

Hatcher, Hazel and Lilla C. Halchin. *The Teachers of Home Economics*. Boston: Houghton Mifflin Co., 1973.

Mehl, Marie A., Hubert H. Mills, Harl R. Douglass, Mary-Margaret Scobey. *Teaching in Elementary School*. New York: The Ronald Press Company, 1955.

Moser, C. A. and G. Kalton. *Survey Methods in Social Investigation*, London: Heinemann Educational, 1971.

Warren, Roland L. *Studying Your Community*. New York: Russell Sage Foundation, 1955.



## OBSERVATIONS



2

Observations can be an important assessment and learning technique if planned and executed carefully. Through careful observations, one can see things as they really are, not what you might think they should be. Observations can not only help the teacher see, but perceive, the needs of her/his students. Observations may be of large groups of individuals. Some general procedures to follow in doing observations include:

1. Make observations systematic. Prepare yourself for the observation with background reading or preliminary information on that which is to be observed. To facilitate the observation one might use a prepared checklist of activities to be observed or prepare such a checklist to meet the specific needs of your observation. Whichever you choose, it is easier and more accurate to look for specific points while observing.
2. Make repeated observations. This may involve observing the same individual or group of individuals several times to determine if your observations are accurate. Repeated observations may also involve observing several individuals or group of individuals looking for the same points to determine the similarities of the observations of those individuals or groups.

3. Record observations immediately. In order to be accurate, notes and thoughts on observations must be made as soon as possible. A checklist helps to make this easier.

When recording observations, it is important to write down exactly what happened, not what you thought happened. You will want to reflect upon your observation, then write down your own thoughts regarding what you observed.

Other points to be considered while one is making an observation would include:

1. Be as inconspicuous as possible, for if young children realize you are observing them, they may act differently than normal.
2. Avoid talking to those you are observing or to others around you.
3. Remain as uninvolved as possible, that is, try not to laugh or show emotion at an incident when it occurs.
4. Remain out of the way of those you are observing. Do not interfere with their movement.

Attached are a couple of sample observation forms. Sample I is an open-ended observation form in which the observer writes his/her own purpose of the observation and then lists points which are to be observed. Sample II already has specific points listed to look for in the observation.



1. Using either of these forms, make an observation of your students in some nutrition-related situation. This could be in the lunchroom, during break time or any other time. If Sample I is used, you will need to set your own objectives for the observation, but if Sample II is used, the points for observation are listed.

2. If available, view the film "Food for Life" and use Sample I observation form to record your observation.

# SAMPLE I

## OBSERVATION FORM (open-ended)

### Directions:

1. Record the information requested on the individual or group being observed.
2. Write the purpose of the observation.
3. List the points you plan to look for during the observation.
4. Complete and summarize the observation.

### Observation:

Name of student or group being observed \_\_\_\_\_

Age/grade level \_\_\_\_\_ Place of observation \_\_\_\_\_

Purpose of observation Observe the factors which influence the four  
different forms of malnutrition.

| Points to be observed                | Check if observed | Comments on what was observed |
|--------------------------------------|-------------------|-------------------------------|
| 1. <i>Environmental influence</i>    |                   |                               |
| 2. <i>Technological influences</i>   |                   |                               |
| 3. <i>Economic influences</i>        |                   |                               |
| 4. <i>Social/Cultural influences</i> |                   |                               |
| 5. <i>Physical influences</i>        |                   |                               |



④

1. What is your general reaction to this observation? Were you able to see the points you were looking for in the observation?

2. How do you plan to incorporate the results of this observation into your classroom.

(Use back of page or additional sheet if necessary.)



Sample II

OBSERVATION FORM



Purpose: The purpose of this observation is to observe the physical signs of good nutrition.

Directions: 1. Complete the information requested before beginning the observation.  
2. Observe the individual or group as needed or as instructed.

3. Check those signs of good nutrition which you were able to observe.
4. For those signs checked, record in the comment column your comments as to why you checked that particular item.
5. Summarize your observation by telling how you could use this information.

Observation:

Name of student or group being observed \_\_\_\_\_

Age/grade level \_\_\_\_\_ Place of observation \_\_\_\_\_

| Signs of Good Nutrition                             | Check if Observed | Comments on what was observed |
|-----------------------------------------------------|-------------------|-------------------------------|
| 1. A general appearance of vitality and well-being. |                   |                               |
| 2. A sturdy, well-shaped skeletal frame.            |                   |                               |
| 3. Well-formed teeth and healthy gums.              |                   |                               |



| Signs of Good Nutrition                                                                                                                                                   | Check if Observed | Comments on what was observed |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------------------|
| 4. A muscular structure which is strong, well-developed and properly balanced so that posture is generally erect.                                                         |                   |                               |
| 5. A well-rounded body contour, suggestive of sufficient, but not excessive, subcutaneous fat which provides moderate padding for protection of the muscles and skeleton. |                   |                               |
| 5. Adequate bodily functions such as good appetite, digestion, physical endurance, nervous stability, and prompt and adequate recovery from fatigue and other stress.     |                   |                               |
| 7. Clear, smooth skin, and mucous membranes.                                                                                                                              |                   |                               |
| 8. Physical measurements of height, weight, and body composition . . . (which meet) standards of growth and development.                                                  |                   |                               |



Summary: How will this observation be of value to you as you plan your teaching unit in nutrition?



Hatcher, H. M. and L. C. Halchin. *The Teaching of Home Economics*, 3rd ed. Boston: Houghton Mifflin Company, 1973.

**nutrition concerns  
and considerations  
in pregnancy  
and lactation**

(script for slide series included)



NUTRITIONAL CONCERNS AND CONSIDERATIONS  
IN PREGNANCY AND LACTATION

by

Debra Mitseff Duke

This slide series is in conjunction with a  
Teacher Training Program in Nutrition for

Home Economics Department  
Ball State University  
Muncie, Indiana

Funded by a Grant from the  
United States Department of Agriculture

through the

Division of School Food and Nutrition Programs  
Indiana Department of Public Instruction  
Harold H. Negley, Superintendent

1980



## Behavioral Objectives and Generalizations

The behavioral objectives are numbered and the generalizations are underlined.



1. The teacher will be able to identify proper dietary habits and their importance before, during, and after pregnancy.

Proper dietary habits play a major role in a healthy body before, during, and after pregnancy.

2. The teacher will be able to cite the relationship of a healthy body prior to conception to conception to a healthy, normal pregnancy.

A healthy body before pregnancy increases chances of normal, healthy pregnancy.

3. The teacher will acquire a knowledge of the special nutritional demands of pregnancy and practical ways of meeting those needs.

Although the nutritional needs are greater during pregnancy, the caloric needs do not increase proportionately.

4. The teacher will be able to list the functions of the following nutrients and dietary components, food sources for those nutrients and components, and show a comparison of the nutritional needs of the pregnant adult woman and pregnant adolescent.

- |              |                                |
|--------------|--------------------------------|
| a. Calcium   | f. Ascorbic Acid               |
| b. Iron      | g. Thiamin, Riboflavin, Niacin |
| c. Protein   | h. Water                       |
| d. Vitamin A | i. Energy                      |
| e. Vitamin D |                                |

Certain nutrients are essential to proper growth and development of the fetus.

Certain foods are better sources of essential nutrients than others.

Some nutritional needs of the pregnant adolescent are different from those of the pregnant adult.

5. The teacher will acquire a knowledge of several common problems of the pregnant woman that may be affected by dietary habits.

There is little harm in indulgence of cravings of foods as long as the overall diet is not adversely affected.



There are physical reasons for frequent urination during pregnancy.  
Certain food choices can help prevent constipation and therefore  
possibly lessen the severity of or prevent hemorrhoids during  
pregnancy.

Certain dietary treatments may relieve the symptoms of "morning sickness."  
Persistent vomiting is not normal and should receive medical attention.  
Suggested dietary habits may help alleviate heartburn.

The majority of pregnant women develop edema in the last trimester.  
Restriction of sodium intake may help to relieve some symptoms of edma.  
Certain nutrient deficiencies may be the cause of leg cramps.

Excessive alcohol usage may interfere with essential nutrient intake.  
Nutrient need is altered by adolescence during pregnancy.

6. The teacher will acquire a knowledge of the importance of a proper increase in weight, and the methods by which it is achieved, during pregnancy.

A woman can expect to gain 24-28 pounds during pregnancy.

Appetite may increase during pregnancy, but there should be a normal rate of weight gain.

Weight reduction should not be encouraged during pregnancy.

7. The teacher will be able to identify misconceptions in pregnancy specifically related to nutrition.

Fainting has no relationship to diet during pregnancy.

Pica can be detrimental in pregnancy by interfering with normal food intake.

"Eating for two" is not necessary for the fetus to receive all nutrients necessary for proper growth and development and results in excessive weight gain.

The parasite theory, where the fetus draws from the stores of the mother despite the maternal diet, is a fallacy.

The maternal instinct theory, suggesting that whatever the fetus needs will be instinctively craved and consumed by the mother, is false.

8. The teacher will acquire a knowledge of the increased nutritional needs and suggested dietary patterns of the nursing mother.

The nutritional needs of the nursing mother are different from a non-nursing woman.

**NUTRITIONAL CONCERNS AND CONSIDERATIONS  
IN PREGNANCY AND LACTATION**

1. **Nutritional Concerns and Considerations  
in Pregnancy and Lactation**

2. **Written by : Debra Mitseff Duke  
Narrated by: Michael D. Duke  
Graphics: L. J. Ernstberger**

3. **This slide series is in conjunction with a  
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4. Nutrition is the most important factor in adult or adolescent pregnancy over which we can exert some control. This slide series will focus on the nutritional concerns and considerations for pregnancy and lactation, high-lighting the basic factors most important as background knowledge for those teachers who may deal with this subject matter area.
5. The nutrition of a woman before pregnancy is important to insure a healthy reproductive environment for implantation and embryonic development. However, research has shown that improved nutrition during pregnancy will contribute to the health of the mother and fetus.
6. To gain a better understanding of the importance of nutrition during pregnancy, one must consider weight gain and those nutrients most critical to health in pregnancy.
7. Confusion about components of weight gain during pregnancy has often resulted in misguided attempts to restrict gain due to failure to appreciate the gain that accompanies a normal pregnancy. The average weight gain associated with the fewest complications for both mother and infant has been found to be 24-28 pounds.

8.

About 16-18 pounds of the weight gain is associated with the fetus, placenta, amniotic fluid, growth of the uterus and breasts, and increase in blood volume. The other 8-10 pounds is thought to be an increase in the fat and protein reserves. The weight gain during the first 13 weeks averages 3 pounds and is primarily due to growth of the uterus and increase in the mother's blood. At this time the fetus weights only about 1.8 ounces. During the last 26 weeks of pregnancy, the gain should be at least 21 pounds or about 1 pound per week. Toward the end of the pregnancy, growth of the fetus accounts for the largest portion of the weight gain. Greater weight gains will benefit neither the mother or baby and may leave the mother with excessive fat accumulation.

9.

To achieve optimum weight gain, guidance should be given in the selection of foods that are nutritious, appealing, and conducive to weight gain within the normal range. Weight reduction regimens should never be used during pregnancy. A good diet and modest exercise should help avoid excessive weight gain.

10.

In view of the many changes taking place in the body, the increased nutritional needs during pregnancy are not surprising. Growth of fetal tissues and the bodily changes of the mother require calories, protein, calcium, iron, and various other minerals and all the vitamins for which reason the RDAs have been increased for pregnancy.

11.

In order to get the kinds of nutrients one needs, one should know about foods; for example, which foods are good sources of protein, vitamins, minerals, etc. No one food provides all nutrients. Therefore, one needs to eat a variety of different foods to get everything one needs.

12.

Here is a sample of some well-planned meals that would supply an expectant mother with her nutritional needs and might appeal to the adolescent.

13.

This chart shows the comparison of the recommended number of servings for the pregnant adult or adolescent.

14.

The energy needs for pregnancy should be met by increasing the intake approximately 300 calories during the third trimester which should also provide for metabolic changes taking place and the growth of the fetus.



15.

Protein provides the structural basis for new growth in maternal and fetal tissue. Requirements for protein during pregnancy are 30 gms. greater than the non-pregnant woman.

16.

Therefore, the diet should include an additional 1-2 servings of meat, poultry, fish, eggs, legumes, or nuts and 1-2 additional servings of milk or cheese.

17.

It is recommended that a pregnant woman increase her daily calcium intake by 400 mg. in pregnancy to meet the needs of the fetus, to increase her stores for lactation, and to take advantage of improved absorption. The fetus acquires most of its calcium in the last trimester, when skeletal growth is maximum and teeth are being formed. Milk and milk products are the outstanding sources of calcium, and the equivalent of 1 to 2 extra glasses of milk will meet this need. Other foods, such as salmon, sardines, and turnip or collard greens provide calcium.



18.

Iron is one of the nutrients receiving the greatest consideration in food enrichment programs, but paradoxically it accounts for only 4 gms. of the body of the well-nourished adult. However, women in pregnancy have a significantly increased demand for iron as a result of increased maternal blood volumes, tissue growth, and transfer of iron from mother to fetus. Fetal iron supplies must be optimal to insure hemoglobin formation critical to oxygen-carrying capacity and growth. This iron reserve will meet some of the needs of the newborn when food sources of iron are minimal.

19.

Careful planning is required to insure an adequate intake of iron. Red meats are good sources of a very well-absorbed iron. Organ meats, such as liver and heart, are outstanding in their iron content. Each meal should include foods high in ascorbic acid to enhance the absorption of iron. Enough meat should be provided as a source of protein and heme iron and to obtain the beneficial effect of meat on iron absorption.

20.

Because the average woman often has such poor iron stores and tends toward iron-deficiency anemia in pregnancy, a daily supplement of 30-60 mg of iron is often recommended for women during pregnancy.

21.

Vitamin A is another nutrient crucial to normal growth and development. It is recommended that vitamin A intake be increased to 6000IU (1000 mg RE) during pregnancy. The outstanding sources of vitamin A found in the fruit and vegetable category are the brightly pigmented yellow and dark green foods such as broccoli, carrots, and spinach. Liver from all animals is also a particularly rich source of this nutrient. Other commonly used foods that provide some vitamin A are eggs, milk, cheese, and ice cream.

22.

The intake of vitamin D should be 400 IU (10 mg) daily during pregnancy. Vitamin D aids in the absorption of calcium and phosphorous, thus ensuring that these minerals are available for building and maintaining bones and teeth. The food sources of vitamin D are fortified milk and milk products.

23.

The intake of vitamin C should be increased to 80 mg in pregnancy as it is important for the formation of collagen, the connective tissues that serves to cement cells and tissues together. This recommendation can readily be met if a variety of foods such as citrus fruits, berries, melons, green vegetables, potatoes, and tomatoes are consumed.

24.

The need for thiamin, riboflavin, and niacin is increased in pregnancy. These needs can easily be met if the overall food intake includes enriched or whole grain products, legumes and meat.

25.

Folic acid is a vitamin for which the recommended intake is considerably increased in pregnancy, so more fruits and vegetables are suggested, but it is recommended that pregnant women take a supplement of 400 micrograms of this vitamin.

26.

If one were to question passersby on the street corner to determine what single substance is of greatest nutritional significance, numerous nutrients would be named. Protein or vitamin C would probably lead the responses with water getting few if any votes. And yet, if water were removed from the diet completely, death would occur in a matter of days. People can survive for much longer periods of time when any other nutrient is eliminated from the diet, than they can without water.

27.

In the case of the pregnant woman, more water is needed to transport nutrients and cool the body. Water comes from all foods we eat and drink, but women should be encouraged to increase their water intake.

28.

Now that we have considered the key nutrients and their food sources, let's take an over-all look at them as shown in this chart.

29.

Keeping the nutritional needs of pregnancy in mind, the remaining slides in this series will focus on the misconceptions and special dietary problems of pregnancy.

30.

A significant number of women may develop cravings for some foods and aversions to others. Eating things like clay is believed by some to be necessary to have a healthy baby. Pica, or eating nonfoods such as chalk, wood, laundry starch, or clay is a habit of pregnant women that appears to be cultural. The problem is that these items may contain substances that decrease the absorption of certain nutrients.

31.

The maternal instinct theory suggests that nutrient needs of the fetus will be instinctively craved and consumed by the mother. While the concentration of certain substances in the mother's blood may stimulate her to eat and drink, this will not necessarily meet the need for specific nutrients because she will not instinctively select the foods needed to meet her nutrient need.

32.

The nutrient needs for normal fetal development cannot be met if the mother's nutritional status is poor. However, people think the fetus draws the needed nutrients from the maternal body despite the diet.

33.

"Eating for two" is a very popular misconception, believed by many to mean that during pregnancy the amount of food eaten should double. It is important that the expectant mother realize that the intake of certain foods is recommended to insure adequate nutrition for both mother and fetus, while making appropriate weight gain.



34.

A factor that must be considered is the physical maturity of the expectant mother. Reproduction in the adolescent is a concern because the nutritional requirements of the adolescent are greater than those of the adult woman. Therefore, adolescent pregnancy creates a dual demand--that for nutrients for the fetus, and for the adolescent herself.

35.

Adolescent pregnancy is of particular concern today because of its significant increase and because two children actually are involved. The nutrition of a child-mother is critical as she must receive a sufficient supply of nutrients for the growth of her own body as well as that of her fetus.

36.

It is important that she consume a diet sufficiently high in caloric content so that the essential nutrients are available in adequate amounts. A physician may recommend routine vitamin and mineral supplements in the diet of a pregnant teenager to overcome deficits for herself and her baby.

37.

The hectic lifestyle of young people makes eating sporadic. Eating several times a day is a common thing. So-called snacks are an integral part of the total meal pattern. In many cases, they make up most of the diet.

38.

However, with nutrition knowledge and planning, between-meal snacks can provide important nutrients, as do well-balanced meals. Young people should be encouraged to choose foods which have a high nutrient content in relation to calories, for snacks as well as meals.

39.

Among adolescents as well as adults, alcohol must be discouraged during pregnancy. Excessive alcohol use will interfere with the intake of essential nutrients and has been shown to cause injury to the fetus.

40.

"Edema," the accumulation of fluid, is manifested during normal pregnancy. The majority of pregnant women develop some edema in the last trimester, usually in the hand and ankle region. The need for salt and fluid is increased somewhat in pregnancy and therefore these substances should not be unduly restricted.



41.

Morning sickness (nausea and vomiting when rising in the morning) is an occurrence most pregnant women expect. This does not occur in all women, and when it does it is usually confined to the first trimester of pregnancy. Certain dietary treatments, such as eating a soda cracker before getting out of bed in the morning, may relieve the "morning sickness." There is usually no cause for alarm when this condition arises but persistent vomiting is not normal and should be brought to the attention of the physician.

42.

The complaints of heartburn are sometimes voiced by pregnant women. This discomfort is usually caused by the pressure of the enlarging uterus crowding the stomach, thereby causing some difficulty after eating. Food mixtures pushed into the lower esophagus from the stomach cause a burning sensation due to the acid mixed with the food mass. This is called heartburn because of the proximity of the lower esophagus to the heart. Smaller meals, adequate chewing, slower eating, and the avoidance of tension and highly spiced foods may help eliminate heartburn. Certain medications may be helpful to relieve the discomfort, but they should be prescribed by a physician.

43.

Painful spasms of the large muscle in the calf of the leg, occurring at night or upon waking in the morning, are common in the later months of pregnancy. This problem is not thought to be diet-related, but due to the pointing of the foot.

44.

Many women are concerned about constipation during pregnancy. Hormonal changes in pregnancy slow down digestion and improve nutrient absorption, but cause what seems to be constipation. Increased cellulose intake from whole grain breads and cereals and fruits and vegetables and prune juice help to make the mother more comfortable. Laxatives, however, like all drugs, must be taken only with the physicians recommendations during pregnancy.

45.

If a condition is thought to be severe, it is important to remember that a doctor should be consulted before any medication is taken.

46.

In the case of the lactating mother, the nutritional needs differ from those of a non-pregnant woman. The optimal diet for the lactating mother is considered to be one which supplies 500 additional calories, an extra 20 gms of protein and therefore sufficient nourishing food to meet increased needs for vitamins and minerals. The mother should consume the equivalent of 2-3 quarts of liquid daily. This fluid is essential to replace the liquid volume for the breast milk and meet her other fluid needs. Vitamin and mineral supplements may be recommended by a doctor but are not routinely recommended by the National Academy of Sciences.

47.

This sample menu suggests foods which would provide for the nutritional needs of the lactating mother.

48.

There are other nutrients that contribute to the nutritional well-being of a pregnant or lactating adult or adolescent. However, this slide series has focused on those dietary factors most crucial to the development of a healthy baby. Hopefully, the knowledge acquired after viewing this series will give its viewers an increased and/or better understanding of the NUTRITIONAL CONCERNS AND CONSIDERATIONS IN PREGNANCY AND LACTATION.

## Post-Test



### Slide Series on Nutritional Considerations and Concerns in Pregnancy and Lactation

Directions: This test consists of answering three essay questions. You must answer questions 1 and 2. Select a third question from 3, 4, 5, and 6.

1. Complete the nutrient chart below.

| <u>Nutrient</u> | <u>Function in Body</u> | <u>Food Source</u> |
|-----------------|-------------------------|--------------------|
| Calcium         |                         | 1.<br>2.           |
| Iron            |                         | 1.<br>2.           |
| Protein         |                         | 1.<br>2.           |
| Vitamin A       |                         | 1.<br>2.           |
| Ascorbic Acid   |                         | 1.<br>2.           |
| Vitamin D       |                         | 1.<br>2.           |

2. Discuss three important reasons for weight control.
  - A.
  - B.
  - C.
3. Give three reasons why it is important to have a healthy body before pregnancy occurs.
  - A.
  - B.
  - C.
4. List three factors affecting the nutrient intake of the pregnant adolescent.
  - A.
  - B.
  - C.
5. Explain two of the misconceptions related to nutrition and how they can be detrimental in pregnancy.
  - A.
  - B.
6. Give three examples of increased nutritional needs during lactation.
  - A.
  - B.
  - C.



## ATTITUDINAL TEST



### Slide Series on Nutritional Considerations and Concerns in Pregnancy and Lactation

Directions: Draw an "X" through the attitude that best describes your feelings about the following:

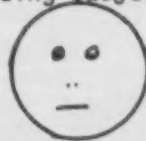
1. Method used in teaching subject material.



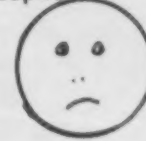
2. Significance of subject material taught.



3. Ease in understanding subject material.



4. Desire to learn more about the topic.





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# NUTRITION INFORMATION



## SECTION II

**Concept:** Nutrition is a study of the foods we eat and how the human body uses those foods. Nutrients are chemical substances contained in foods necessary for growth, development and maintenance of human life.

**Objectives:** The teachers will acquire a knowledge of the principle function of nutrients with the emphasis on those nutrients commonly deficient in students, levels pre-school to 12.

The teachers will acquire a knowledge of the relationship between nutrients and foods with emphasis on those food sources of nutrients commonly deficient in students, levels pre-school to 12.

The teachers will become aware of the importance of the relationships of food and nutrition to the growth and development of human life both physical and mental.

### Section Topics:

Nutrition Introduction  
Vitamins (overview)  
Vitamin A  
Ascorbic Acid  
Mineral Elements  
Calcium and Phosphorus  
Iron

**nutrition  
introduction**



## NUTRITION

### Introduction



2

Your body is made from the food you eat. Starting with a single cell and growing to your present size, your food is you. Food is necessary for many different things including blood, bones, energy, and personality. In fact, food of the right kind and amount gives you the feeling and appearance of good health. So, if you eat the right food, then this is what good nutrition may do for you.

If your nutrition is poor you may be seriously handicapped by being tired and lacking stamina and enthusiasm. Poor nutrition may creep into your life and cause worry and irritability. You have the most to do about your nutrition and the food that is you. The choice of foods may be difficult but you do not have to be a nutritionist or food scientist to select wisely the foods that are needed by the body. If you have a dependable source of information and follow intelligently the directions given, foods can be chosen for health and vigor.

The important role that food plays in building strong, healthy individuals cannot be over-emphasized. Scientists agree that modern medicine and appropriate environmental conditions are essential factors in building and protecting health. The foods selected from the environment are a major determinant in human nutrition. An individual may exercise more control over his nutrition than over most other factors which influence health and disease.

Scientists are working constantly to increase our knowledge about food and nutrition and to find ways of applying this knowledge for the benefit of individuals and nations. Whether you benefit from this knowledge depends on whether you use it in choosing the foods your body needs to be well-developed.

One of the causes of malnutrition is ignorance of what constitutes good nutrition and what food choices will lead to it. A knowledge of the basic principles of nutrition is necessary if consumers are to use their food dollars wisely. Malnutrition resulting from a lack of basic knowledge about food values needs to be prevented.

Americans are probably more health conscious and more aware of the association of nutrition with nourishing food and good health than any other people. Good nutrition is a condition, whereby, the body is well-nourished using food containing the essential nutrients in the amounts needed. Today many people realize that nutrition contributes to the health and welfare of all.

Food is a major part of nutrition. To study about nutrition we learn about foods. More specifically, we are interested in the food we eat. The study of nutrition includes everything that happens to food--from the time you eat it until it is used for building, repairing, and maintaining the body. Man needs food to 1) nourish the body, 2) satisfy hunger, 3) satisfy certain social needs, and 4) achieve certain psychological ends.

Man also needs food to meet the different requirements of the body: growth, repair and upkeep, and regulation of body processes.

These needs are met by many different nutrients. Foods contain chemical substances called nutrients. There are forty nutrients found in our foods which may fulfill the needs of the body. These were first thought to be needed for the prevention of disease, but now it is realized that nutrients are related to good health, vitality, and longevity. If our bodies could manufacture all the nutrients, then we could stop eating. The nutrients are divided into six classifications of which you may be familiar. Carbohydrates include the sugars and starches, proteins provide amino acids, and fats give fatty acids. The other nutrients are vitamins, minerals and water.

Energy is an absolute necessity for our bodies, but to supply energy is not the only reason we eat. Materials are needed for the body's growth, repair and upkeep. During the growing period large amounts of every kind of material for the building of muscle, bone, blood, vital organs and other tissues are necessary. When growth is complete, the same materials are still needed for upkeep and repair. At all times, materials regulating body processes keep everything running in an efficient, orderly fashion.

Our plan of action to reach the goal of good eating and good health is first to choose foods containing calories which keep company with an abundance of nutrients until all of our nutritional needs--except energy--have been supplied. To carry out this plan, we need to know something more about foods than just their calorie values. If we choose our foods with thought only for their calorie values, we could have a day with all the food our stomachs will hold, but obtaining very little nourishment for health and vitality.



Many nutrients occur together in foods, and this fact greatly simplifies the job of selecting a nutritionally adequate diet. Knowing about the nutrients, the foods which supply them, and why we need them, adds purpose and interest to our everyday eating habits. Since no one food group supplies the required important amounts of all the nutrients, it takes many kinds of food to supply all the dietary essentials for good health. This makes eating more interesting and challenging.

Foods may contain other important nutrients which are as yet unknown. This is one of the many reasons why we need to get our nourishment from food instead of from vitamin and mineral pills or supplements which contain only the nutrients listed on the label. Foods are the best sources of the nutrients we need. The grocery store, the meat market, the dairy, the bakery, the garden, the frozen food locker, the food storage cellar are the supply houses of good nutrition.

Good nutrition must concern itself with the amounts as well as with kinds of nutrients. Neither can substitute for the other. A large quantity of one nutrient cannot make up for the lack of another nutrient. The body must have a large enough supply of each nutrient to meet all of its different needs all of the time. A reserve supply of some nutrients in the body for use during emergencies is desirable also.

Recommendations for the amounts of different nutrients needed for good nutrition by persons living in the United States are made by a group of scientists who are members of the committee on Recommended Allowances of

the National Academy of Sciences--National Research Council. The Committee has the responsibility for interpreting the results of research and setting up Recommended Dietary Allowances. These are the amounts of calories and certain nutrients that are needed for the maintenance of good nutrition in healthy persons in the United States. Amounts are not specified for two of the nutrients (carbohydrates and fats) because supplying enough of these need not require special care in making food choices. The allowances are higher than the least amounts required for health; they provide a margin of safety for the nutrients but not for calories. They do not cover the additional requirements associated with disease or with recovery from malnutrition. These recommended allowances are the goals toward which to work in planning adequate diets. They are also the goals used in planning our country's food supplies (see page 37).

We can be well fed and have good food habits without knowing about the recommended allowances. It is the scientific basis for the Daily Food Guide of the Basic Four Food Groups which we do need to know about. Many of you are familiar with the Basic Four Food Groups which include the Meat Group, Grain Group, Milk, and Fruits and Vegetables. For this Guide the allowances have been translated into servings of the different foods which contain these nutrients. A balanced diet is the term often used for the combination of the right amounts of the right kinds of food to provide all of the nutrients in sufficient quantities for good health. This nutrition training program explores in some depth the nutrients vitamin A, ascorbic acid, calcium, phosphorus, and iron.



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**vitamins** [overview]



## VITAMINS

### Overview



Once a day, just to be sure, millions of people living in the United States take a multi-vitamin capsule. An advertisement on television shows a person explaining how he stays healthy and looking young. Of course, he watches his diet, gets plenty of exercise and, just to be sure, takes a vitamin-mineral supplement daily. This is the way Americans have come to expect the marketing of dietary supplements. These supplements are being promoted as an insurance policy to guarantee good health for all.

The implication of this advertising has contributed to the myth that even a balanced diet cannot provide adequate nutrients for good health. Other people maintain that modern farming methods have depleted the soil of much needed nutrients so that the food supply no longer contains adequate nutrients. In truth, the nutrient content of a plant is controlled by its genetic structure and not by the nutrient content of the soil.

Many Americans believe that since some vitamins are good for them, the more the better. Mothers are especially guilty of reacting to this philosophy. Many thousands of cases of vitamin poisoning are reported



each year with the largest number of cases occurring in children. Others with rashes, diarrhea, or headaches may be unwary victims.

Another common belief is that vitamins provide extra energy, cure tiredness or a run-down feeling, or help in stressful situations. Vitamins do not provide energy for the body but some B vitamins will aid in the conversion of food to usable energy. Unless there is actually a deficiency, excessive amounts of a vitamin provide no value, the effect is purely psychological.

Getting back to nature or using supplements may be a very expensive way of life. People sometimes pay extra for ascorbic acid supplements made from pure rose hips or other natural sources. Each vitamin has a particular molecular structure that remains the same whether synthesized in the laboratory or extracted from an animal or plant or consumed as part of an animal or plant. So it all comes back to the basic rules about eating a balanced varied diet. Food contributes vitamins as well as other nutrients plus bulk and texture to the diet for the good health of the human body.

The existence of vitamins was overlooked for many years because most foods supplied by nature contain a good amount and foods in an ordinary diet supplement each other in vitamin content. Animals get their vitamins directly from plants or from other animals that have fed on plants. Vitamins were the last nutrients to be discovered in the nutrition field. It was not until after 1900 when the chemical structure of carbohydrates, proteins and fats was established that scientists found other substances in food which helped support life.

Vitamins appear in foods and the human body in such minute amounts that a more sophisticated knowledge of biology and chemistry was needed to isolate and distinguish each one.

Vitamins are organic compounds needed in very small amounts in the diet of higher animals to promote normal growth, reproduction or maintain health and life. These substances are not formed within the human body but must be supplied from sources outside the body, i.e., food. Vitamins are destructable and can be broken down or altered in shape so they must be handled with care. The body makes special provisions to absorb vitamins, providing some with protein carriers. A vitamin may be useful in one form here and another form there in the body, so special enzymes are provided to slightly alter the form of a vitamin to make it active in a given role. Vitamins are involved in the metabolism and fate of all cellular substances.

The chief aim of a study of vitamins is to inform individuals about the need for human beings to get plenty of all the various vitamins for the promotion of good health. Vitamin concentrates and pure synthetic vitamins are useful for the cure of conditions in which persons are unable to consume an adequate diet. The objective of nutrition is to have enough of all the needed vitamins in the diet for maintenance of normal body processes. When we get our vitamins from foods, we obtain, in addition, all the other nutrients essential to health.

One method of classifying vitamins is to separate them on the basis of their solubility in fats or water. This also indicates the kinds of food in which certain vitamins may be found, the way a vitamin may be used in the body, and the way a food needs to be handled during processing, to preserve the vitamin content.

Fat soluble vitamins (A, D, E, K) are found in foods such as fish and plant oils. They are handled in the body like fats, being transported on a protein carrier by way of the lymph to the subclavian vein entering the blood stream, then to the heart and on to other organs and tissues. These vitamins are stored in the cells of the body attached to fat and may be toxic to the body, especially A and D, if consumed in large amounts.

All of the other vitamins (B-complex and ascorbic acid) are water soluble. This means they may be readily lost from foods by improper handling. Water soluble vitamins cross the intestinal and vascular walls directly into the blood stream where they are transported to the different organs and tissues. These vitamins circulate freely among all the body organs and can be stored in the lean tissues for periods of a month or more. Because these tissues are actively exchanging materials with the body fluids, water soluble vitamins are constantly being dissolved and carried away to be excreted by the kidneys.



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vitamin a





## VITAMIN A

Programmed Instruction: Cover the answers on the right side with a sheet of paper.



2

and



1

1. At the time of its discovery in 1913, vitamin A was shown to be a fat soluble substance. It was not until 1931 that vitamin A was isolated and its molecular structure determined. Synthesis of the vitamin in a laboratory was achieved in 1946. Both natural and synthesized forms of vitamin A are \_\_\_\_\_ soluble.

2. The human body may use two forms of vitamin A, preformed or precursor. Preformed vitamin A comes directly from animal food sources such as liver and butter. The vitamin A which is preformed and comes from \_\_\_\_\_ sources is ready for man to use.

3. In crystalline form, vitamin A is a pale yellow. The other form of vitamin A comes from plant foods and is called a carotenoid. Man can use either of the \_\_\_\_\_ forms of vitamin A.  
(number)

1. fat

2. animal

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| <p>4. The plant precursors, carotenoids, contribute to the vitamin A value of a plant food. There are several plant precursors of vitamin A, with the most important being beta-carotene, a dark red crystalline compound. Although beta-carotene may produce two molecules of vitamin A, in humans the biological activity of beta-carotene is much slower than vitamin A due to the variable availability and the low efficiency of conversion. Because of this, beta-carotene usually produces only one molecule of vitamin _____ in the human body.</p> | <p>3. two</p>         |
| <p>5. Vitamin A is a fairly stable compound. Because vitamin A and its precursors are soluble in fat and fat solvents, there is very little loss in food preparation. It is not easily destroyed by the heat of ordinary cooking temperatures or by the addition of an acid or alkali. Since vitamin A does not dissolve in water and is stable to heat and both acid and alkali, we do not lose much of it in food _____.</p>                                                                                                                              | <p>4. A</p>           |
| <p>6. The loss of vitamin A is caused by oxidation (exposure to oxygen) and ultraviolet light. When fats become rancid through long storage time, vitamin A is destroyed. The loss of vitamin A through exposure to oxygen is called _____. This is often prevented or retarded because antioxidants are present in many natural oils.</p>                                                                                                                                                                                                                  | <p>5. preparation</p> |
| <p>7. The natural antioxidants in oils may be removed in the refining process. To prevent vitamin A losses, fats and oils should be kept in opaque containers in a dark cool place. Proper storage prevents exposure to both oxygen and _____.</p>                                                                                                                                                                                                                                                                                                          | <p>6. oxidation</p>   |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| 8. Lecithin or tocopherol may be added commercially to prevent oxidation. If foods rich in vitamin A are stored in an opaque container in a place that is _____ and _____, little vitamin A will be lost.                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 7. ultraviolet light                   |
| 9. Vitamin A is sometimes referred to as a complex vitamin because it occurs in the body in three different forms: 1) retinol (an alcohol), 2) retinal (an aldehyde), and 3) retinoic acid (an acid). The blood carries vitamin A in the alcohol form or _____. The other two forms, _____ and _____, are present in smaller amounts in the body.                                                                                                                                                                                                                                                                                                                        | 8. dark, cool                          |
| 10. Most of the vitamin A found in the human body appears in the liver. This organ is the main storage site for vitamin A as well as for many of the other nutrients. All animals store large amounts of vitamin A in the _____.                                                                                                                                                                                                                                                                                                                                                                                                                                         | 9. retinol<br>retinal<br>retinoic acid |
| 11. The two forms of the vitamin, proformed vitamin A and the precursor, carotene, undergo two different processes for absorption. Vitamin A is absorbed from the upper part of the small intestine, changed into retinol and carried by the blood to the liver. In humans, the wall of the small intestine is the place where carotene is converted to vitamin A, although some conversion may also occur in the liver. An enzyme system containing carotenase helps break down the _____ into simpler molecules in the process of converting it to vitamin A. Retinal is formed first and then retinol which is carried by the blood to the liver for use and storage. | 10. liver                              |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| <p>12. Bile salts are needed for the efficient absorption of both vitamin A and carotene. If the gall bladder is not functioning properly to produce sufficient _____ salts, the absorption of both forms, _____ and _____ is retarded.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <p>11. carotene</p>                        |
| <p>13. Vitamin A helps the human eye adjust to change in light intensity because it functions in the reaction of pigment breakdown in the presence of light and pigment build-up in the cones and rods in the dark. Unless there is sufficient supply in the diet or stored in the body, rod vision is impaired. A slight deficiency of vitamin A will then result in night blindness. By measuring the light threshold of a person, it may be possible to determine the nutritional status of the body in relation to vitamin A metabolism. Because the lack of the ability of the human eye to adjust quickly to changes in light intensity has a serious effect on vision for night driving, this condition caused by a lack of vitamin A is often referred to as _____.</p> | <p>12. bile<br/>vitamin A<br/>carotene</p> |
| <p>14. Vitamin A is necessary for the health of the mucous linings of the body as well as the skin. Vitamin A must be present for the body to produce a carbohydrate found in mucous. If vitamin A is lacking, a protein called keratin is produced instead. The skin is likely to become dry with too little vitamin A. It is important to have sufficient vitamin A to keep both the _____ and _____ linings healthy because they both help the body resist infections.</p>                                                                                                                                                                                                                                                                                                   | <p>13. night<br/>blindness</p>             |
| <p>15. There are greater losses of vitamin A during infections, which indicates an increased need of the vitamin during that time. It is especially important to eat foods rich in vitamin A when we have an infection because _____.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <p>14. skin<br/>mucous</p>                 |

16. Vitamin A favors normal growth and development, particularly of the bones and teeth. Other functions of vitamin A include the role it plays in the reproductive process, structure of cell membranes and their normal permeability, metabolism of protein, and many others. Researchers are investigating these functions of vitamin A to answer new questions about this vitamin. Although vitamin A appears most important in the eyes' adjustment to changes in light intensity and to maintain the health of the epithelial tissues, other functions include \_\_\_\_\_ and \_\_\_\_\_.

15. greater losses  
greater need

17. Plant foods contain only the precursor forms (carotenes) of vitamin A. Those sorts of plants distinguished by an orange-yellow color are high in vitamin A value. Parts of plants which contain the green pigment, chlorophyll, may also be high in vitamin A value, although this pigment may obscure the orange-yellow color of carotene. The bright green thinner leaves of the plant may have more carotene content than the pale thicker ones. Because plants contain only \_\_\_\_\_, a deep orange-yellow color, such as found in carrots, is an indication of a rich source of this form of vitamin A.

16. (any two)  
normal growth,  
reproductive  
process,  
structure of  
cell membranes,  
metabolism of  
protein

18. Animal foods contain both preformed vitamin A and carotene. Fish liver oils, liver and egg yolks are excellent animal sources of both forms of vitamin A. The amount of vitamin A contained in the food will vary with the diet of the animal. Since preformed vitamin A is pale yellow, color is not a reliable indicator of the amount contained in animal foods. The presence of both forms of vitamin A, \_\_\_\_\_ and \_\_\_\_\_, in animal foods makes them a more efficient source than plant foods.

17. carotene



|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| <p>19. The comparative stability of vitamin A and carotene to heat, plus their insolubility in water leads to good retention of this nutrient during this process through which food passes from production to service at the table. For optimal carotene content of the plant, the farmer should select superior varieties, fertilize poor soil, and harvest while the plant is young. The consumer should purchase fresh, unwilted vegetables and store in a cool dark place. The fact that both forms of vitamin A are _____ to heat and _____ in water results in retention of most vitamin A value during food processing and preparation.</p> | <p>18. preformed precursor (or carotene)</p>                           |
| <p>20. Pasteurized and evaporated milk retains vitamin A content in processing. Fluid skim milk and nonfat instant dried milk, which have both had most of their fat removed, are fortified with vitamin A. Margarine is also fortified with vitamin A. The fact that they are fortified with vitamin A makes _____ and _____ as good a source of this vitamin as whole milk and _____ as rich a source as butter.</p>                                                                                                                                                                                                                              | <p>19. stable insoluble</p>                                            |
| <p>21. Carotene in large amounts may accumulate in the body and a yellow tinged skin is the only sign of an excess. The yellow color, particularly noticeable in the palms of the hands, is the only observable indication of too much _____.</p>                                                                                                                                                                                                                                                                                                                                                                                                   | <p>20. fluid skim milk<br/><br/>nonfat dry milk<br/><br/>margarine</p> |
| <p>22. Excessive amounts of vitamin A may lead to a toxic reaction in the body, such as coarsening and dryness of skin, thinning of hair, pains in joints, hyperirritability, bone decalcification, and increased intracranial pressures. Unless a person consumes polar bear liver which contains a toxic level of vitamin A, the only possible toxicity from vitamin A comes from supplements. When young children continue to receive massive amounts of concentrated vitamin preparations, the excessive amounts of vitamin A can result in _____ reactions.</p>                                                                                | <p>21. carotene</p>                                                    |

23. Carotenoid content of the blood and vitamin A serum levels are measured because this reflects the intake of both the preformed vitamin and the precursors and includes the vitamin A that the body has made from ingested carotenoids. Levels of vitamin A and carotene have been shown to be affected by such factors as type of diet, completeness of absorption, storage in the liver, and lipid concentration of the serum, as well as by certain diseases. Although an individual may appear to be consuming enough vitamin A, levels actually used by the body may be affected by \_\_\_\_\_ and \_\_\_\_\_.

22. toxic

24. A study of the blood is useful in determining whether the day to day intake of vitamin A is low or excessive. A serum level may not be lowered appreciably until the diet lacks vitamin A for months; whereas the carotene value drops rapidly when food intake of vitamin A and carotenoids is low. Although the carotene value changes rapidly with low intake, the serum level of vitamin A in the body's blood may not be lowered for \_\_\_\_\_.

23. (any two)

type of diet  
completeness  
of absorption  
storage in liver  
lipid concentration of serum  
certain diseases

25. Evaluation of vitamin A status of the body is based on blood studies, dark adaptation of the eyes, excretion, and clinical examination of the person. Individuals having low amounts of vitamin A in the body suffer from spots and dryness of the eye and irreversible blindness.

The food on today's market in the United States contributes an adequate amount of vitamin A to the diet. However, the American diet is low in vitamin A and carotene because we do not like and eat foods high in those nutrients. It is possible to get a liberal amount of vitamin A even on a low income because dry skim milk and margarine are both fortified. Liver should also be included in the diet because of its relatively low cost and the contribution of many other nutrients it makes to the diet.

See how much you can remember by answering these questions. If you do poorly on any of them, it would be helpful to review this frame again.

1. Evaluation of vitamin A status of the body is based on: a.  
b.
2. When an individuals' diet is low in vitamin A, they may suffer from: a.  
b.
3. The American diet is (high/low) in vitamin A.
4. Name three foods containing vitamin A or carotene.

24. months

25. 1. blood studies  
dark adaptation  
of eyes  
excretion  
clinical exam  
2 spots and dryness  
of the eye and  
irreversible  
blindness.  
3. low  
4. dry skim milk  
margarine  
liver  
carrots



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## ASCORBIC ACID

### WHY DO WE STUDY ASCORBIC ACID?



2

*The American diet may be low in ascorbic acid. According to research studies conducted in the United States, the diets of infants, teenagers, and those over sixty are often lower than the*

*R.D.A. for ascorbic acid. An adequate intake of this vitamin is essential. Because of a lack of basic knowledge in nutrition, many people do not realize the importance of ascorbic acid in the body. The lack of stability of this vitamin makes it probable that people get much less from their food supply than originally thought. Shipments of food from long distances, exposure of food to the warm dry atmosphere of the supermarket, poor storage conditions in the home and careless food preparation methods decrease the amount of ascorbic acid contained in food.*

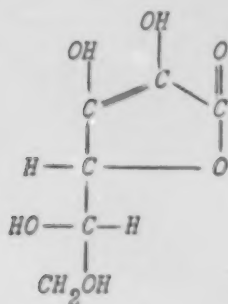
*The ascorbic acid needs of the body vary in each individual because of certain factors: stress, heavy cigarette smoking, fevers, infections, or mechanical injuries. These factors may result in a lack of saturation of body tissues along with excessive elimination of the vitamin.*

*It would seem necessary that people become aware of the problems in obtaining and utilizing ascorbic acid.*

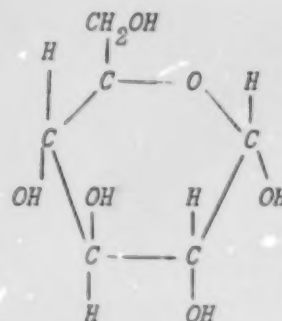


## WHAT IS ASCORBIC ACID?

Ascorbic acid is one of the water-soluble vitamins. It has a molecular structure of six carbon atoms joined in a ring. This structure closely resembles that of the simple sugar, glucose.



Ascorbic Acid



Glucose

Man, the fruit-eating bat, guinea pigs, and the red-vested bulbul (a bird) are the only animals who cannot produce ascorbic acid in their own bodies. All of the other animals, even the lowly house-fly, produce an extremely high amount of ascorbic acid each day from glucose and galactose, two simple sugars found in any living organism. Man is deficient in two specific enzymes that are needed in the biosynthesis of glucose and galactose into ascorbic acid.

Ascorbic acid is readily soluble in water, is odorless, and in pure form, occurs as white crystals. It is insoluble in fat and fat solvents and destroyed on exposure to heat and air.

## HOW IS ASCORBIC ACID ABSORBED?

*Since ascorbic acid is water soluble, it is readily absorbed from the small intestine into the blood stream. Tissues having the highest metabolic activity have a higher concentration of ascorbic acid. Ascorbic acid content of the tissues tends to decrease with age and excretion of the vitamin is greater in the older person.*

*Comparatively little of this vitamin is stored in the body. The major portion of the intake is excreted within three to four hours after ingestion with the kidneys being the main excretory organ. To gain maximum benefit from larger intakes of ascorbic acid, the amount should be divided into several smaller ones and taken at intervals to assure more prolonged tissue saturation.*

## WHAT ARE THE FUNCTIONS OF ASCORBIC ACID?

*Ascorbic acid is responsible for a number of apparently unrelated functions in the body. All of the exact functions of ascorbic acid have not been determined. The best understood and most fundamental role of ascorbic acid is in helping form the protein, collagen. Collagen is a major part of many body tissues including hair, skin, and bones. Ascorbic acid is needed to change the amino acid, proline, to hydroxy proline, a major constituent in the synthesis of collagen. The main type of tissue damage in animals with scurvy is in the connective tissues.*

*Ascorbic acid is essential for the formation of hemoglobin, the absorption of iron from the small intestine, and deposition of iron into*

the liver cells. This in turn assists in the formation of red blood cells. A combination of these reactions over a long period of time, may cause the anemia accompanying ascorbic acid deficiency.

Ascorbic acid adds strength to the blood vessels and with a deficiency the skin tends to show a hemorrhage or bruise easily.

#### WHAT ARE THE RESULTS OF A LACK OF ASCORBIC ACID?

Scurvy is the name given to the disease resulting from a lack of ascorbic acid in the body. This results in abnormalities in the intercellular tissues and is evident in the hemorrhaging of soft swollen gums. Teeth have resorbed paratic dentine, bones are weak and malformed, muscle fibers degenerate and anemia may occur. Latent scurvy, prevalent among low income groups, accompanies certain diseases and is evidenced by lassitude, fleeting pains, especially at the joints, bleeding gums and internal hemorrhages resulting in black and blue spots.

During a deficiency of ascorbic acid, wound healing is retarded and defective. The role of ascorbic acid in infection is frequently mentioned. There is still no proof positive that ascorbic acid will cure the common cold; however, it has been discovered that increased amounts of ascorbic acid will shorten the duration of a cold.

#### WHAT ARE GOOD FOOD SOURCES OF ASCORBIC ACID?

Plants are the best sources for ascorbic acid with citrus fruits and strawberries excellent and other foods--tomatoes, green pepper and cantaloupe--good. Animal foods are very poor sources. The

ascorbic acid content of plant foods varies with such factors as variety of food, climate, amount of sunshine, soil and degree of maturity. Various parts of the plant differ in their content of the vitamin.

To help retain ascorbic acid in food:

1. Buy fresh young fruits and vegetables which are refrigerated or placed on crushed ice.
2. Store produce in the refrigerator protected from exposure to air.
3. Prepare in small amounts of cooking water.
4. Do not use baking soda in preparation method, as it contributes to the loss of ascorbic acid.
5. Freeze quickly to conserve ascorbic acid.
6. Can by modern methods to minimize loss of ascorbic acid.
7. Avoid dehydration because it does not preserve as much ascorbic acid as freezing or canning.

#### HOW MUCH ASCORBIC ACID IS NEEDED DAILY BY INDIVIDUALS?

Forty-five to sixty mg. of ascorbic acid daily are recommended for an adult by the Committee on Recommended Allowances of the National Academy of Sciences-National Research Council. These values are based on a variety of types of studies which have considered intake levels of man and animals in relation to protection against scurvy, to specific functions such as wound healing and to tissue storage and excretion.

## SHOULD MAN INGEST LARGE AMOUNTS OF ASCORBIC ACID DAILY?

Many animals produce an average amount of ascorbic acid to approximate at least 10 grams for every 70 kilograms of creature. The average man weighs about 70 kilograms and while the RDA suggests an average of 60 milligrams of ascorbic acid daily, this is far short of the amount naturally produced by other animals. It has been suggested that humans may need to ingest 10 grams of ascorbic acid each day to equal the amount produced in some animals. This may help in the resistance to diseases and for other reasons as well.

There is no known toxicity to man of ascorbic acid but a laxative effect occurs in many individuals on megadoses of ascorbic acid. Research has not been completed on the subject. In at least one study, subjects have ingested half a pound of ascorbic acid in one day without serious side effects. High dosages of ascorbic acid, although apparently safe for the general public, occasionally have undesirable side effects in special cases.

Mega doses of above 100 mg, or more per day have been known to increase the excretion of oxalic and uric acid in the urine of some people. This condition may precipitate minerals from the diet in some of these people and cause kidney stones.

Since ascorbic acid increases the iron absorption from food, there is a group of individuals that through a metabolic disorder become very sensitive to an iron overload and risk illness. The intake of large amounts of ascorbic acid in the diabetic may lead to misinformation from the results of a glucose tolerance



test. During pregnancy, if large amounts of ascorbic acid are taken, after birth the newborn may develop scurvy. Medical treatment is indicated immediately or severe consequences may occur to the child.

Until further information on the amount of ascorbic acid needed by man on a daily basis has been verified, it would seem that excessive amounts are not advised.

#### WHAT DOES RESEARCH SHOW ABOUT SPECIAL NEEDS FOR ASCORBIC ACID?

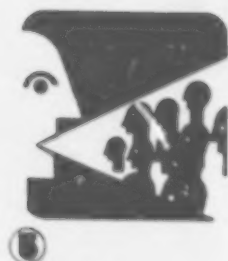
Research studies have investigated the need of additional ascorbic acid in population groups and special situations. These include:

- a. Heavy smokers - Studies have found these individuals to have lower plasma levels of ascorbic acid.
- b. Fracture patients-To facilitate healing some physicians make it a practice to give fracture patients a larger daily dose of ascorvic acid.
- c. Pregnancy - Due to hemodilution (increased body fluids with subsequent dilution of nutrients) this group characteristically exhibit reduced serum levels of ascorbic acid. Also the production of new body tissues increases the demand for ascorbic acid.
- d. Geriatric patient - Poor absorbance of water soluble vitamins (including ascorbic acid) due to reduced gastric secretions as well as reduced calorie intake from poor eating habits makes this group a special risk. Some of the only cases of scurvy in recent years have been old men living alone who eat inadequate diets. There is also thought to be a need for more ascorbic acid due to the increased need for more regenerative collagen.
- e. Oral contraceptive users - Research has found reduced levels of ascorbic acid in the blood plasma and leukocyte concentration of this group. It is thought that steroids may decrease intestinal absorption or increase metabolism of the

vitamins so that more ascorbic acid is excreted.

- f. Heavy drinkers - Due to poor eating habits, alcoholics are notorious for their lowered intake of all nutrients. Since the ascorbic acid supply must be replenished daily then, this group is also a special risk.
- g. Stress - Research has found that rats under conditions of stress, manufacture more ascorbic acid than contented rats. This theory has been transferred to humans and it is thought that persons under stress need more ascorbic acid. It is known that the adrenal glands have a higher concentration of ascorbic acid than the other tissues of the body. The adrenal glands are known to play a considerable part in meeting the demands of stress. These facts all point to a relationship between vitamin C and stress, but more research is needed in this area for conclusive proof.
- h. High fever - This physiologically stressful situation can increase the body's need for ascorbic acid.
- i. Antibiotics, sulfa drugs, aspirin, anti-convulsants, tetracycline, cortisone The prolonged administration of these drugs increases the urinary excretion of ascorbic acid, antacids work against adequate ascorbic nutrition. This means care should be taken when taking ascorbic acid, and antacids not to take them at the same time.
- j. Growth - Children during periods of growth and pregnant and lactating women need increased amounts of ascorbic acid. In the treatment of certain diseases other than scurvy an increased intake of ascorbic acid may be beneficial.

# SUGGESTED ACTIVITIES RELATED TO THE STUDY OF ASCORBIC ACID



1. As you are studying ascorbic acid in your classroom, you might set up a tasting panel to taste various sources of ascorbic acid. For example, have the students compare the amount and cost of ascorbic acid in various types of orange juices and fresh oranges. You could use fresh oranges, frozen pure orange juice, frozen orange juice drinks, canned orange juice drinks, and powdered orange juice mixes. A suggested evaluation form is given for students to use: (This should be adapted to evaluate different criteria according to the ability of your students).

## EVALUATION OF ORANGE PRODUCTS

| CRITERIA                                 | ORANGE PRODUCTS |   |   |   |   |   |
|------------------------------------------|-----------------|---|---|---|---|---|
|                                          | A               | B | C | D | E | F |
| Cost                                     |                 |   |   |   |   |   |
| Taste, rank 1-6                          |                 |   |   |   |   |   |
| Amount of Ascorbic Acid<br>(read labels) |                 |   |   |   |   |   |

2. Show the film *Sugar Cereal Imitation Orange Breakfast* produced by Benchmark Films, 1972. (9 minutes, 16mm)



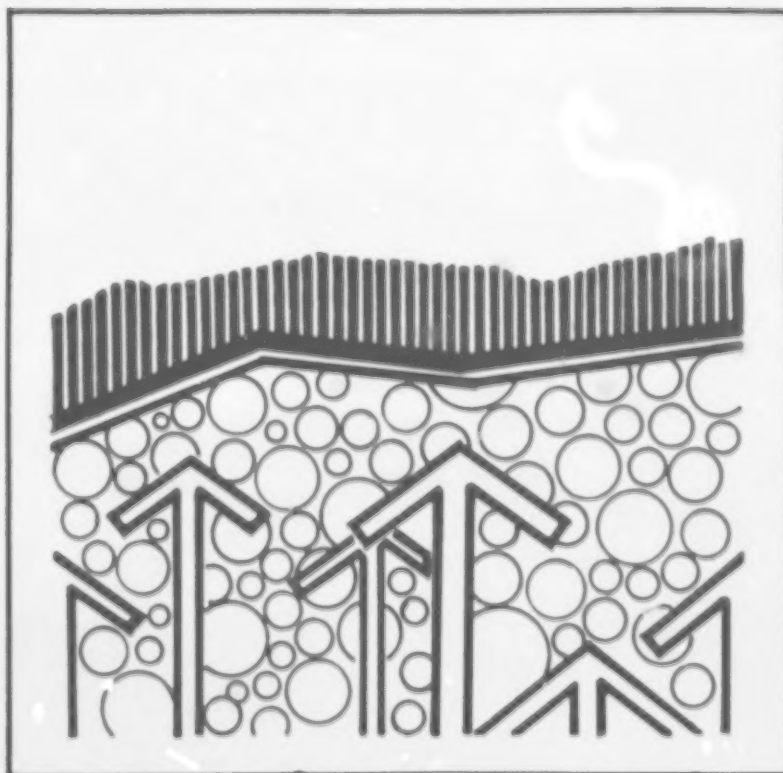
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mineral elements





## MINERAL ELEMENTS

### Introduction



2

Mineral elements which are necessary for the human body actually originate in the soil which has been fed by rocks disintegrating over the ages. Plants grow in the soil and take up these inorganic elements. Animals consume the plants and so humans may obtain minerals in their diet from animal as well as plant foods.

The knowledge of a need for minerals dates back to ancient times in both the Asian and Middle Eastern cultures. The antirachitic properties and other health benefits of milk, ground dry bones, and other rich sources of calcium and phosphorus have been known for ages. Iron has long been a basic constituent of health tonics. Sponges (containing iodine) were ground to be used in medicine to prevent an enlargement of the neck (goiter) in early times.

In general, minerals have two main functions in the human body. The first is as an actual constituent of the body in both the hard and soft tissues. In a second important role, minerals act as regulators and are necessary to certain body functions, such as electrolytes in body fluids. Minerals seldom operate in isolation but are interrelated and balanced to perform well.

Minerals required in relatively large amounts in the body are classified as macrominerals. Those required or present in amounts less

than 0.005 percent are known as microminerals. About four percent of body weight can be attributed to minerals, most of which are in the hard tissues of the body. The remaining minerals are found in the intra- and extra-cellular fluids.



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calcium  
and phosphorus



## CALCIUM AND PHOSPHORUS

Programmed Instruction: Cover the answers on the right side with a sheet of paper.



2

and



1

1. There is more calcium in the body than any other mineral. Calcium and phosphorus are responsible for the strength and hardness of the bones and teeth. A well-built, substantial framework is a necessary safeguard for health and also makes for a well-shaped and poised body. To attain the proper bone development, calcium and phosphorus are essential. In addition to \_\_\_\_\_ and \_\_\_\_\_, other minerals, some vitamins and protein are needed for bone development.

2. The name calcium is derived from the Latin word, calx, which means chalk. From the appearance of dry bones and teeth, it is obvious that calcium is a white substance. In its pure state calcium is a powdery and chalk-like substance. Pure calcium is a \_\_\_\_\_ substance.

3. Calcium is stable to heat and light but will dissolve in an acid medium. Calcium is not damaged by cooking temperatures or exposure to light but can be dissolved if it is left in \_\_\_\_\_.

1. calcium  
phosphorus

2. white  
powdery

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| <p>4. Approximately 99% of the calcium in the body is found in the bones and teeth in the form of calcium phosphate. Bones and teeth have a very interesting structure. In the fetus, a soft matrix for bone formation is developed from the protein, collagen. After birth, this matrix becomes more rigid as growth proceeds and the protein _____ is surrounded by tiny crystals of complex calcium salts. Blood vessels are contained within the bone marrow and healthy living bone has a deep red color.</p>                                                                                                                   | <p>3. acid</p>     |
| <p>5. The same type of structure as for bones occurs in the teeth, except that the mineral crystals in the enamel and dentine are larger and more densely packed. This leads to a relatively slower metabolism in the teeth. Once the teeth have been formed and calcified, their composition is hard to alter by changes in the diet. The permanent teeth begin to form even before birth. The teeth are not drained of calcium as easily as the bones and in the adult they are not affected by a shortage of calcium. Tooth structure will be changed very little/much (circle one) because of a lack of calcium in the diet.</p> | <p>4. collagen</p> |
| <p>6. The calcium content of the blood is kept at a constant level. The levels of calcium and phosphorus within the blood are controlled by the action of parathyroid hormone and other hormones. Calcium is kept at a _____ level in the blood by a balance between the amounts of the minerals absorbed, the demands of various tissues for the minerals, the amounts contributed from resorption from the bone and by discarded cells and the amount excreted.</p>                                                                                                                                                                | <p>5. little</p>   |
| <p>7. The levels of calcium and phosphorus within the blood are controlled by the action of the _____. Calcium in the blood is one of the factors necessary for coagulation of blood. For maintenance of a rhythmic heart beat, calcium must be in proper concentration in the blood with other minerals (sodium, potassium, and magnesium).</p>                                                                                                                                                                                                                                                                                     | <p>6. constant</p> |



|                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| <p>8. In addition to its necessary functions in the blood of _____ and maintenance of a rhythmic _____, calcium may have a role in the absorption of vitamin B-12 from the intestinal tract and it appears to help maintain normal cell permeability. It also regulates the contraction of muscle and transmits nerve impulses over neuro-muscular junctions.</p>                                                                                   | <p>7. parathyroid hormone</p>                                            |
| <p>9. Although only about 1% of the calcium in the body is found in the blood, it serves many important functions there. Among these functions, in addition to blood coagulation and maintenance of a rhythmic heart beat, are a. _____ and b. _____.</p>                                                                                                                                                                                           | <p>8. coagulation<br/>heart beat</p>                                     |
| <p>10. Phosphorus, a nonmetallic element, was first discovered in 1669. It created a great deal of interest because in the unnatural free form it glows in the dark, is toxic and breaks into fire spontaneously. It is also used in making matches. Fortunately, in nature it occurs in combined form and does not have these properties. Phosphorus found in nature does not burst into fire spontaneously because it is found in _____ form.</p> | <p>9. contraction of muscles<br/><br/>transmitting of nerve impulses</p> |
| <p>11. Phosphorus is a constituent of every cell. In combination with calcium it contributes to the supportive structures of the body. Phosphorus is involved in a great variety of chemical reactions in the body. Many of the B-vitamins are effective only with phosphate in the body.</p>                                                                                                                                                       | <p>10. combined</p>                                                      |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| <p>12. Calcium and phosphorus in digested food material are absorbed through the wall of the small intestine and carried by the blood to all parts of the body. Absorption of calcium and phosphorus from the intestinal tract varies with different individuals and under different conditions, but it is not as complete as for many other nutrients. In a mixed diet under ordinary conditions, about 70% of the phosphorus intake and only 20 to 40% of the calcium intake is absorbed. The human body is not very _____ in the absorption of calcium and phosphorus.</p>                                                             | <p>11. cell</p>                 |
| <p>13. A number of factors influence the amount of calcium absorbed. The body utilizes calcium very effectively when needed. During periods of growth and gestation when the need for the mineral is increased, there tends to be better absorption. Because there is a greater demand for it, calcium is absorbed more efficiently during periods of _____ and _____.</p>                                                                                                                                                                                                                                                                | <p>12. efficient</p>            |
| <p>14. In addition to demand, a number of other factors influence the amount of calcium absorbed. These include the amount of vitamin D available and the degree of acidity of the digestive juices. The calcium in some foods is absorbed more easily than the calcium in others. The carbohydrate, lactose, in milk facilitates calcium absorption. Adequate amounts of vitamin A, ascorbic acid, iron, and protein foster calcium absorption. Good calcium absorption is more likely to occur if one consumes a mixed diet with adequate amounts of vitamins _____, _____ and _____, the carbohydrate _____ and the mineral _____.</p> | <p>13. growth<br/>gestation</p> |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| <p>15. Factors which have an undesirable effect on calcium absorption include diets high in fat, phytic acid (contained in oatmeal and other whole grain cereals) and oxalic acid present in spinach, rhubarb and chocolate. These substances may combine with calcium to form insoluble compounds which cannot be utilized by the body. Although _____ acid and _____ acid found in some foods and fats combine with calcium to make insoluble compounds which the body cannot use, the amounts usually consumed do not interfere with the calcium in other foods eaten at the same time.</p> | <p>14. A, D, and<br/>ascorbic acid<br/><br/>lactose<br/><br/>iron</p> |
| <p>16. Too much fiber in the diet may also have a detrimental effect on calcium absorption because of decreasing the time the food mass remains in the intestinal tract. Increasing the _____ content of the diet results in the food mass staying in the intestinal tract too little time for the _____ to be absorbed completely.</p>                                                                                                                                                                                                                                                        | <p>15. phytic acid<br/><br/>oxalic acid</p>                           |
| <p>17. The recommendations made by the Food and Nutrition Board for the amount of calcium needed are based on recent research and nutrition surveys with allowances being made for incomplete absorption of calcium from the intestine. A healthy adult needs about 800 milligrams of calcium a day. A person can get the RDA of _____ mg. of calcium by the daily ingestion of less than three cups of milk. This amount of milk provides not only the needed amount of calcium, but also many other nutrients.</p>                                                                           | <p>16. fiber<br/><br/>calcium</p>                                     |
| <p>18. Since calcium is so often associated with growth, many adults feel they do not need it. This is not true because people of all ages must have calcium for the daily functioning of the body and the replacement of calcium in the bones. Adults <u>do/do not</u> (circle one) need to include foods high in calcium content in their daily diets.</p>                                                                                                                                                                                                                                   | <p>17. 800</p>                                                        |

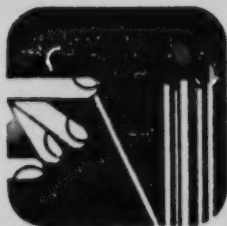
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| <p>19. It is assumed that the diet which contains the recommended amounts of calcium and protein will furnish enough phosphorus. Because nearly all foods contain phosphorus, diets containing enough _____ and _____ are assumed to supply adequate amounts of phosphorus.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <p>18. do</p>                  |
| <p>20. Requirements for calcium and phosphorus remain high in women because of the importance of a generous intake in preparation for the child-bearing period. Illness, when accompanied by fever, results in a lowered gastric acidity and decreased absorption of calcium over a period of time. During periods of stress, such as illness, people need increased/decreased (circle one) amounts of calcium in the diet.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <p>19. calcium<br/>protein</p> |
| <p>21. Osteoporosis is a disorder involving a loss of total bone. The bones become fragile and porous because calcium is being withdrawn from the bones faster than it can be deposited. Bones of the spine and pelvis are most often involved. Factors which contribute to this disease include the inability of some persons to absorb calcium adequately, low levels of calcium intake over long periods of time, and the improper amounts of other nutrients such as vitamin D, fats and phosphates. Prevention seems to be the best way to reduce the incidence of osteoporosis. Adequate supplies of calcium, vitamin D, protein and fluoridated water help prevent osteoporosis. It is estimated that as many as four million people in the U.S. may be affected by osteoporosis. This calcium metabolism disorder called _____ usually occurs after the age of 55 and is four times more common in women than in men.</p> | <p>20. increased</p>           |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| <p>22. Osteomalacia, a disease known as adult rickets, is caused by the same imbalance of nutrients as rickets in children. There is a high incidence of the disease in the Far East, with women being the likely victims. This high incidence of adult rickets or _____, in women may be due to a lack of calcium in the diet during pregnancy and lactation or to very little exposure to sunlight over the years.</p>                                                                                                                                                                                               | <p>21. osteoporosis</p>                                                    |
| <p>23. Phosphorus deficiency seldom develops in normal humans because of its wide distribution in foods. A deficiency may be seen in man during certain clinical conditions in persons receiving antacids over long periods and in certain stress situations such as bone fractures. Persons suffering from a _____ deficiency may have symptoms of weakness and bone pain caused by demineralization of bone and loss of calcium.</p>                                                                                                                                                                                 | <p>22. osteomalacia</p>                                                    |
| <p>24. Calcium is very unevenly distributed in foods. Milk and milk products are the richest sources. If _____ is not incorporated into the daily diet, it is almost impossible to provide an adequate amount of calcium for the body. Other foods which contain important amounts of _____ are cheddar cheese, eggs (where they are important in the diet) and cottage cheese. Leafy green vegetables are good food sources along with some fruits such as oranges, grapefruit. Meats and grains are among the poorest sources. In addition to milk, good food sources of calcium include _____, _____ and _____.</p> | <p>23. phosphorus</p>                                                      |
| <p>25. Phosphorus is more generally distributed in both animal and vegetable foods than is calcium. Whole grains are superior in phosphorus content, dried beans and nuts contain high amounts, with fish and meats good sources. Vegetables are low in phosphorus. To be sure of getting enough phosphorus, a person should eat _____, _____, and _____. Although some foods are richer in phosphorus than others, phosphorus is more/less (circle one) generally distributed in foods than is calcium.</p>                                                                                                           | <p>24. milk<br/>calcium<br/>cheddar cheese<br/>eggs<br/>cottage cheese</p> |



|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>26. When heating milk, the scum which forms on top contains calcium and phosphorus, so stir milk well and do not remove the scum. The soaking of fruits and vegetables and discarding the soaking water will increase the loss of minerals. A good axiom to remember is the thinner the slice and the smaller the piece, the greater the loss of minerals. The common practice among several cultural groups of putting a number of vegetables into the soup pot and flavoring the mixture with meat is valuable in that it conserves the minerals in food; such a dish should have a larger place in the low cost American diet. Today, the greater use of salad and many raw vegetables which formerly were served cooked has increased the possibility of securing minerals from plant sources. Food preparation practices which maintain the mineral content of foods include _____, _____, and _____.</p> | <p>25. whole grains<br/>dried beans<br/>nuts<br/>fish &amp; meat<br/>more</p>                                                                             |
| <p>27. Dairy products, excluding butter which is almost all fat, provide three-fourths of the calcium in the food supply and are produced plentifully in this country. The low consumption of foods high in calcium by some people in the U.S. is due partly to economic conditions. An inadequate family income and the relatively high cost of fluid whole milk may account for a considerable number of low calcium diets, since dairy products provide _____ of the calcium in the food supply.</p>                                                                                                                                                                                                                                                                                                                                                                                                           | <p>26. eat vegetables<br/>raw<br/><br/>use cooking<br/>water<br/><br/>cook foods whole<br/>or in large<br/>pieces<br/><br/>stir milk<br/>when heating</p> |
| <p>28. Dried non-fat milk is a valuable addition to the family food supply, since it is inexpensive and does not need refrigeration prior to mixing. An inexpensive way to include calcium in the diet is to use _____ especially for cooking.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <p>27. Cheese-<br/>butter</p>                                                                                                                             |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| 29. The belief that milk is for the young, has led adults to low intakes of milk and a subsequent lack of calcium in the diet. Education is necessary to overcome this problem. The fact that adults continue to need calcium all throughout life and the fact that milk and dairy products are by far the best food sources are too little recognized by adults. <u>appears needed to help adults realize the importance of milk in the daily food pattern.</u> | 28. dried non-fat milk |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 29. education          |



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## IRON

### WHY DO WE STUDY IRON?



②

Since iron has been easy to obtain, its discovery was lost in the history of man, many thousands of years ago. It was a major ingredient of favorite health tonics and old-time patent medicines. In the 1700's iron was discovered to be a component of the body and later on the blood (an essential part of the red protein, hemoglobin, of the red blood cells).

The role of iron in the blood seems to hold a peculiar fascination for Americans. A glance at television commercials and printed advertisements bears this out. Not only drugs, but various foods have been heralded as rich sources of iron, a mineral purported to have magical qualities. The refining and processing of our food supply and the great decrease in the use of cast iron cooking equipment in food manufacturing and in our homes have been major reasons for a deficiency of iron in the United States.

### WHAT ARE THE FUNCTIONS OF IRON?

The most important function of iron in the body is its role in the formation of hemoglobin in the red blood cells. Hemoglobin is a red compound consisting of two parts: globin, a protein, tightly

connected to heme, a nonprotein substance, which contains iron. Each molecule of hemoglobin carries four molecules of oxygen and is essential for the transport of oxygen in the body. Iron is distributed throughout the body, being a component of essential metabolic enzymes in every cell. The adult human body contains a total of four or five grams of iron.

#### HOW DOES THE BODY ABSORB IRON?

The body guards its iron stores very carefully and reuses any which is broken down in the body over and over again. Because considerable iron is needed when large amounts of blood are lost, the body has a unique built-in control mechanism which allows the small intestine to absorb more iron when the need is greatest and to inhibit absorption when there is an excess. Normally, only about one-tenth of the iron in the diet is absorbed. In the small intestine, the epithelial cells lining the intestinal wall (the mucosal cell) are the key to the mechanism of iron absorption. It appears that a protein, gastroferrin, present in normal gastric juice, is involved in the regulation of the absorption of iron by the mucosal cells.

Once iron is inside the mucosal cell, it can either be transferred (and later released) to the tissues with the aid of a protein, transferrin, or it can be stored in the mucosal cell or other body cells in the form of a unique protein, ferritin.

## WHAT FACTORS AFFECT THE AVAILABILITY OF IRON?

*Foods contain two forms of iron, heme and nonheme. The amounts of these two forms of iron in any particular meal are considered separately because of their different availability and the influences of other dietary ingredients on their absorption. The absorption of nonheme iron is enhanced by ascorbic acid and the quantity of animal tissues present in each meal.*

*The 1980 Recommended Dietary Allowances state that on the basis of the concentration of these enhancing factors, meals can be classified as low, medium, or high availability of nonheme iron. The method requires the computation of five variables for each meal.*

- 1. Total iron (values from standard food composition tables)*
- 2. Heme iron (40% of total iron of animal tissues)*
- 3. Non-heme iron (1 minus 2)*
- 4. Ascorbic acid (present in meal as consumed)*
- 5. The amount of meat, poultry, and/or fish.*

*The absorption of iron would be higher in iron-deficient subjects who have higher iron requirement and lower for individuals with greater iron stores. There are dietary and medicinal substances which decrease iron absorption. These include calcium and phosphate salts, ETA, phytates, tannic acid in tea, and antacids.*



## HOW IS IRON STORED IN THE BODY?

*The largest concentration of iron in the body next to that found in hemoglobin is stored in combination with protein as ferritin and hemosiderine in the liver, spleen and bone marrow. The body has a store of readily available iron, made up of recently absorbed iron plus that recently released by the breaking down of red blood cells. This iron is used by preference for hemoglobin in building new red blood cells. Older stores of iron as those in the liver may be somewhat less readily available and the fixed iron in tissue cells is not drawn upon even in times of great need in the body for this element.*

## HOW MUCH IRON IS NEEDED BY THE BODY?

*The recommended dietary allowance for iron is higher in women than in men. More iron is recommended for periods of growth and reproduction. During the child-bearing years females need 18 mg. of iron daily while males require only 10 mg. Young mammals have a reserve of iron in the body accumulated during gestation. Human infants need little dietary iron until after 4 months of age. Twins and infants born prematurely have the same high levels of iron at birth but these decrease more rapidly and additional iron must be given earlier.*

## WHAT IS IRON DEFICIENCY ANEMIA?

A deficiency of iron in man causes a disease known as iron deficiency anemia, in which the level of hemoglobin in the red blood cells is reduced and the red cells are smaller. Some other symptoms of iron deficiency are now known to occur even in the absence of anemia; such as faulty digestion, measurable changes in levels of various enzymes containing iron, cellular damage, and low iron stores.

Iron deficiency anemia, like anemias from other causes, reduces the oxygen carrying capacity of the blood, resulting in such symptoms as paleness of the skin, weakness, shortness of breath, lack of appetite, and a general slowing of the vital functions of the body.

Anemias may be brought about by excessive loss of blood. Excessive menstrual bleeding may constitute a continual drain on body iron stores. Unusually high iron needs may be precipitated by hemorrhages or by blood donation. To replace this major loss of iron, the body mobilizes stored iron and promotes more efficient absorption of food iron. Anemia tends to develop during an infection. Treatment is based on the cause of the infection, but diet is also important.

## WHAT ARE THE FOOD SOURCES OF IRON?

People should be very careful to make sure their requirement of iron is met daily. Lean meat and liver are very good sources of iron. Dried beans with molasses added are an inexpensive source of iron. The leafy green vegetables with high amounts of chlorophyll contain more iron than others. Potatoes,

because of their high consumption are valued as good sources of iron, especially in older people. Flour and other cereal products are enriched with iron. Dried fruits contain high amounts of iron but may be too expensive for most people. Iron is probably the most difficult nutrient to obtain in sufficient amounts.

### HOW DO WE PRESERVE IRON CONTENT OF FOODS?

It has been found by researchers in the United States that females from 14 to about 55 years of age are low in iron content but they may not be anemic. The iron stores of their bodies may be low or depleted. Women are more likely to show nutritional anemia than any other group of individuals. Conscientious effort must be made to include iron rich foods and foods which enhance the absorption of iron in the daily menu and to increase the amounts of iron added to foods by enrichment so that the incidence of iron-deficiency anemia may be reduced.



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**related annotated  
bibliography**





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- Beaton, G. H. et al., "Iron Requirements of Menstruating Women." *American Journal of Clinical Nutrition*, 1967, 23, p. 275.

College women were tested and according to the data obtained, it was found that with iron intakes below 11 mg/day, menstrual loss may not be compensated by intake and iron-depletion results. Levels above 11 mg/day are not adequate enough for significant inter-action to be demonstrated.

- Bullamore, J. R., et al., "Effect of Age on Calcium Absorption." *Lancet*, 1970, 2, 535-537.

Calcium absorption was measured in human subjects 20-95 years. Absorption of calcium fell with age after 60 years and everyone over 80 years had significant malabsorption.

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The article discussed the method of using radioactive iron, which had been baked into a loaf of bread, to measure the level of iron absorption. It was found that iron was not absorbed as well when it was fortified into the bread as when it was given in a standard 5 mg dose.

Cantile, G. et al., "Iron and Folate Nutrition in a Group of Private Obstetrical Patients." *American Journal of Clinical Nutrition*, 1971, 24, p. 637.

Data obtained indicated that dietary iron intake of private obstetrical patients was not sufficient to prevent a state of iron deficiency in the latter half of pregnancy, therefore, supplementation was recommended. Also, data confirmed that in a significant percentage of women, who can afford a private obstetrician, the intakes of folates from food was not sufficient to prevent mild folate deficiency in pregnancy.

Cook, J. D., et al., "Absorption of Fortification Iron in Bread."  
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This is a re-release of a 1914 article on scurvy in infants in the *American Journal of Diseases of Children*, in which the material of the study done then is summarized.

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The focus of this article was on Dr. Frederick J. Stare and his attitudes toward sugar and sugar consumption.

Hodges, R. E., et al., "Experimental Scurvy in Man." *American Journal of Clinical Nutrition*, 1969, 22, pp. 535-548.

Experimental scurvy was investigated and biochemical tests were performed to study the effects of a diet devoid of ascorbic acid.

Hodges, R. E., et al., "Clinical Manifestations of Ascorbic Acid Deficiency in Man." *American Journal of Clinical Nutrition*, 1971, 24, pp. 432-443.

Experimental clinical scurvy was investigated in human subjects. Signs and symptoms were fatigue, hemorrhagic phenomena, swollen joints, swollen bleeding gums, follicular hyperkeratosis, muscular aches and pains and emotional changes. The minimal amount of ascorbic acid necessary to prevent or cure scurvy was found to be slightly less than 10 mg daily.

"Hyperlysemia and Iron Deficiency." *Nutrition Reviews*, Feb., 1975, 33, 2, pp. 55-56.

An iron deficient diet produced anemia and depletion of iron stores in pregnant rats. The offspring were also iron deficient and developed hyperlysemia when suckled by iron deficient mothers.

"Intestinal Malabsorption of Iron." *Nutrition Reviews*, Sept., 1976, 34, 9, pp. 270-272.

Inability to absorb iron taken orally documented by an absorption test was considered to be responsible for therapeutic failures in patients with iron deficiency anemia.

Irwin, J. J. and E. W. Kienholz. "A Conspectus of Research on Calcium Requirements of Man." *Journal of Nutrition*, 1973, 103, pp. 1019-1095.

This article reviews what work had been done on determining human requirements for calcium. It includes a very large body of literature on calcium metabolism.



"Is Vitamin C Really Good for Colds?" *Consumer Report*, Feb., 1976, 41, 2, pp. 68-70.

This article is concerned with answers to popular questions to vitamin C effectiveness and dosage and studies to support the findings.

Johnson, N. E., E. N. Alcantara, and Linkswiler, "Effect of Level of Protein Intake on Urinary and Fecal Calcium and Calcium Retention of Young Adult Males." *Journal of Nutrition*, 1970, 100, pp. 1425-1430.

A significant increase in urinary calcium was noticed when protein intake was increased. Absorption of calcium was also higher, but protein intake had no effect on serum calcium.

Kinsman, R. A. and J. Hood. "Some Behavioral Effects of Ascorbic Acid Deficiency." *American Journal of Clinical Nutrition*, 1971, 24, pp. 455-464.

In a study of experimental scurvy, detailed observations were made on the effects on behavior of deprivation of ascorbic acid. During deprivation changes were found to occur in measures of personality and psychomotor performance and in certain physical fitness tasks.

Layriss, M., et al., "The Effect of Interaction of Various Foods on Iron Absorption." *American Journal of Clinical Nutrition*, 1968, 21, p. 1175.

A study was done to compare the iron absorption in foods of vegetable origin when they were given in combination with foods of animal origin or when they were given alone. The study showed that iron absorption was improved when the two foods were combined.

Layrisse, M. et al., "Measurement of the Total Dietary Iron Absorption by the Extrinsic Tag Model." *American Journal of Clinical Nutrition*, 1974, 27, pp. 152-162.

The measurement of the daily non-heme iron absorption from diets consumed in different areas was studied. The data presented indicated that the amount of dietary iron absorbed by individuals and that the components of a meal such as beef, fish and fruits are paramount to obtain a reasonable utilization of the non-heme iron.



Lotz, M., E. Zisman and F. C. Bartter. "Evidence for a Phosphorus-Depletion Syndrome in Man." *New England Journal of Medicine*, 1968, 278, pp. 409-415.

Tests were conducted and it was discovered that antacids can impair phosphorus absorption in man. Numerous problems such as hypophosphatemia, hypercalciuria, anorexia, and many others were related to non-absorbable antacids.

Lubowe, Irwin, "The Use of Vitamins in Dermatology." *Journal of Applied Nutrition*, Spring, 1975, 27, 1, pp. 17-27.

The use of vitamins A, B, B<sub>6</sub>, C, D, E, and K in treatment advances in dermatology was discussed.

Lutwak, L., "Tracer Studies of Intestinal Calcium Absorption in Man." *American Journal of Clinical Nutrition*, 1969, 22, p. 771.

Iron studies were performed on subjects from 18-91 years of age, including those with both "normal" and osteoporotic characteristics. Dietary urine and fecal calcium were measured by an atomic absorption spectrophotometric procedure. Oral etiology and intravenous tracers were best. Osteoporosis in males caused a less than normal range of calcium absorption compared to that of females.

Mamesh, M. S., et al., "Availability of Iron from Labeled Wheat, Chick Pease, Broad Bean and Okra in Anemic Blood Donors." *American Journal of Clinical Nutrition*, 1970, 23, p. 1027.

Subjects were selected from a blood donor bank in Beirut who had low hemoglobin and hemotocrit values. Wheat, chick peas, broad bean, and okra were used as supplements to represent cereals, legumes and green leafy vegetables with iron added. Wheat dependency for iron consumption contributed to iron deficiency anemia.

Margen, S. et al., "Studies in Calcium Metabolism. I. The Calci-uretic Effect of Dietary Protein." *American Journal of Clinical Nutrition*, 1974, 27, pp. 584-589.

The data demonstrated that urinary calcium is directly related to protein intake.

Morgan, D. R., et al., "Seasonal Changes in Urinary Excretion of Calcium." *American Journal of Clinical Nutrition*, 1972, 25, p. 652.

Six females were studied for calcium excretion in urine. Intakes did not fluctuate incredibly, but excretion was considered high in all but one woman in July as compared to January.

Petchel, Karen A. and Arthur F. Mello. "A School Fluoride Mouth-rinse Program." *Journal of School Health*, 1977, 47, 9, pp. 557-558.

A fluoride mouthrinse program is one answer to the problem of dental disease among the elementary school population.

"Problems in Iron Enrichment and Fortification of Foods," *Nutrition Reviews*, Feb., 1975, 33, 2, pp. 46-47.

The biological availability of iron compounds is not easily predictable in the food product and the most available forms of iron cause the greatest difficulty in quality and storage of the target food.

Schwartz, Nancy E. and Susan I. Barr. "Mothers--Their Attitudes and Practices in Perinatal Nutrition." *Journal of Nutrition Education*, 1977, 9, pp. 169-172.

In Vancouver, physicians were considered the main sources of nutrition information.

Shenoliker, I. S. "Absorption of Dietary Calcium in Pregnancy." *American Journal of Clinical Nutrition*, 1969, 23, p. 1.

A group of pregnant women were given a specific amount of calcium in their diet throughout pregnancy and data was collected to determine the level of calcium retention. The study showed that calcium absorption did increase in the latter part of pregnancy, which may be due to a decrease in urinary excretion of calcium or an increase in absorption from the gastrointestinal tract, or both.

Srikantia, S. G., M. Mohanram and K. Krishnaswamy. "Human Requirements of Ascorbic Acid." *American Journal of Clinical Nutrition*, 1970, 23, pp. 59-62.

The results of this study indicate that adequate levels of tissue ascorbic acid can be maintained on intakes between 12-22 mg. daily. Ten milligrams of ascorbic acid a day can cure ascurvy.

Walker, A., "The Human Requirements of Calcium; Should Low Intakes Be Supplemented?" *American Journal of Clinical Nutrition*, 1972, 25, p. 518.

Analyses were done in South America, an area known for its low calcium intake, in order to find out if supplementation was needed. The conclusion was that there was no evidence that a low intake of calcium was harmful to man or that an increase would have any significant benefits.

Walker, A., and H. M. Linkswiler. "Calcium Retention in the Adult Human Male as Affected by Protein Intake." *Journal of Nutrition*, 1972, 102, pp. 1297-1302.

This study showed that an increase in protein intake by man causes an increase in urinary calcium and absorption of calcium. Protein intake had no effect on serum calcium.

# EDUCATIONAL METHODOLOGIES



### SECTION III

**Concept:** Nutrition can be taught using a variety of educational methodologies, strategies, and techniques which include those appropriate for involving parents, community, and school food service personnel.

**Objectives:** The teachers will become aware of the importance of parents, community and food service personnel in fostering positive nutrition attitudes and behaviors.

The teachers will acquire a knowledge of methodologies appropriate to transmit nutrition information to students.

The teachers will evaluate nutrition information sources and nutrition education materials.

The teachers will identify the kinds (levels) of nutrition concepts appropriate for various ages of students and develop an articulated sequence of concepts.

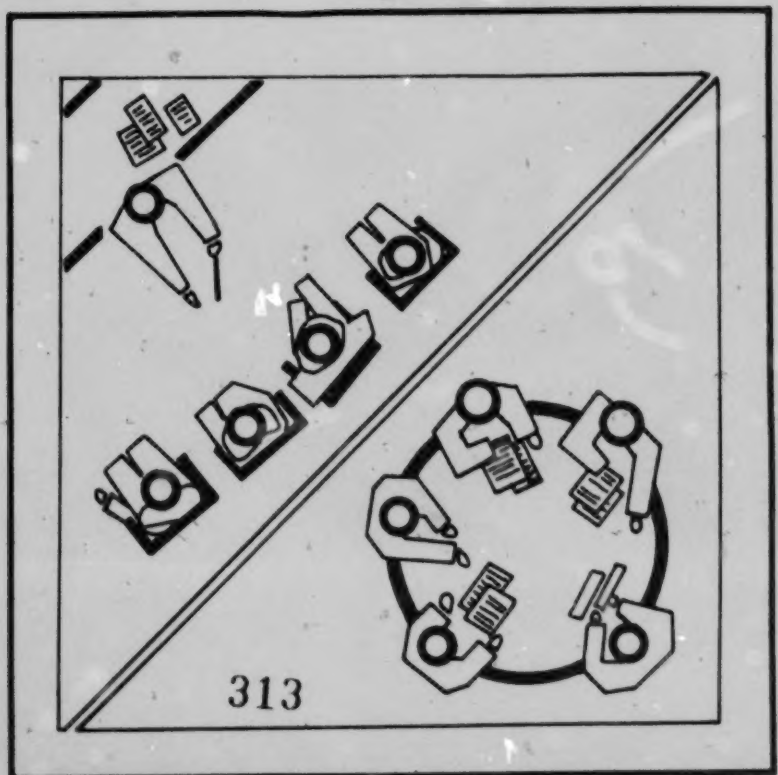
The teachers will develop, or select from available nutrition education materials, sample student activities to implement and test with their classes.

#### Section Topics:

- Organizational Structure of the Classroom
- Develop a Nutrition Project
- Resource Persons
- Field Trips
- Community Service Projects
- Involving Parents
- Involving School Food Service
- Choosing Teaching Materials
- Gaming as a Teaching Technique
- Student Activities
- Evaluation of a Nutrition Article
- Scope and Sequence



**organizational  
structure  
of the classroom**



## ORGANIZATIONAL STRUCTURE OF THE CLASSROOM



2

Much could be said about how a classroom should be organized and conducted, but in this brief overview of the organizational structure of the classroom two different types of classrooms are described. There are the teacher-centered classroom and the student-centered classroom.

The teacher-centered classroom is one in which most of the time most of the activities revolve around the teacher. This is to say that the teacher is directly involved in the teaching/learning situation. The teacher's involvement is found in the form of verbal presentations, demonstrations, use of filmstrips and films, assignments and supervised work in the textbooks and workbooks, etc. The following shows some of the different types of activities which might be found in a teacher-centered classroom. Only those activities which would be relevant to teach the various nutrition concepts are included.

Selected Activities for Teaching Nutrition  
in a Teacher-Centered Classroom

| Grade Level         | Activities                                                                                                                                                                                         |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Preschool - Grade 2 | Illustrated talk<br>Flannel boards<br>Puppets prepared and presented by teacher<br>Resource persons<br>Films<br>Filmstrips<br>Video tapes                                                          |
| Grades 3-6          | Illustrated talk<br>Flannel boards<br>Puppets prepared and presented by teacher<br>Resource persons<br>Films<br>Filmstrips<br>Video tapes<br>Verbal presentations<br>Demonstrations                |
| Jr. High            | Illustrated talk<br>Flannel boards<br>Puppets, used only for special effects<br>Resource persons<br>Films<br>Filmstrips<br>Video tapes<br>Verbal presentations<br>Demonstrations<br>Transparencies |
| Sr. High            | Illustrated talk<br>Flannel boards<br>Resource persons<br>Films<br>Filmstrips<br>Video tapes<br>Verbal presentations<br>Demonstrations<br>Transparencies                                           |

In the student-centered classroom the teaching/learning activities revolve around the students. The student becomes actively involved in the teaching/learning process. Student involvement can be on three levels. The student may be involved individually, or he may be involved in either small or large groups. In the student-centered classroom the teacher is available to provide guidance or give assistance to student activities. The following is a listing of some activities which are student-centered. Again, only those activities which would be relevant to teach the various nutrition concepts are included.

SELECTED ACTIVITIES FOR TEACHING NUTRITION  
IN A STUDENT-CENTERED CLASSROOM

| Grade Level           | Individualized                                                                                      | Small Group                                                            | Large Group                                                                                                                                                               |
|-----------------------|-----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pre-school to Grade 2 | Learning centers<br>Games<br>Projects<br>Analysis of food eaten<br>Show and tell<br>Worksheets      | Learning centers<br>Games<br>Projects                                  | Tasting parties<br>Games<br>Projects<br>Field trips<br><br>Food preparation<br>(Entire class would be involved but in groups of 3-4)                                      |
| Grades 3-6            | Learning centers<br>Games<br><br>Reports<br>Projects<br><br>Planning daily dietary<br>Food analyses | Learning centers<br>Games<br><br>Projects<br>Planning lunch-room menus | Games<br>Animal feeding demonstrations<br>Tasting parties<br>Projects<br><br>Field trips<br><br>Food preparation<br>(Entire class would be involved but in groups of 3-4) |

| Grade Level | Individualized                                                                                                                                                                  | Small Group                                                                                                                                   | Large Group                                                                                                                                                                               |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Jr. High    | Programmed instruction<br>Learning modules<br>Games<br>Reports<br>Learning Centers<br>Projects<br>Planning daily dietary<br>Food analyses<br>Surveys                            | Games<br>Debates<br>Panel Discussion<br>Dramatizations<br>Learning Centers<br>Projects<br>Surveys<br>Planning lunch-room menus                | Games<br>Tasting parties<br>Animal feeding demonstrations<br>Field trips<br>Projects<br>Food preparation (Entire class would be involved but in groups of 3-4)<br>Surveys<br>Role-playing |
| Sr. High    | Games<br>Reports<br>Research projects<br>Learning Centers<br>Projects<br>Programmed Instruction<br>Surveys<br>Analyzing case studies<br>Food analyses<br>Planning daily dietary | Games<br>Debates<br>Panel discussions<br>Dramatizations<br>Arrange bulletin boards<br>Set up displays<br>Surveys<br>Planning lunch-room menus | Games<br>Tasting parties<br>Animal feeding demonstrations<br>Projects<br>Surveys<br>Role-playing<br>Food preparation (Entire class would be involved but in groups of 3-4)                |

The ideal classroom would have a mix between teacher-centered and student-centered activities. The combination of the two allows the teacher to have a variety of activities in the classroom. This variety is beneficial for the many different types of students found in today's classroom.



**develop a  
nutrition project**





## DEVELOP A NUTRITION PROJECT

(A learning Module)

①

### INTRODUCTION

As you complete your course of study on the functions of nutrients and relationship between nutrients and foods, it is time to begin thinking about how you can disseminate your knowledge to others. The intent of this module is to help you develop a usable project that will explain one or more nutrition concepts. Before beginning the project you must have some knowledge of how such a project relates to the lesson in which it is being used; therefore, prior to developing your nutrition project you need to plan a lesson which would include your nutrition project as one of the learning activities. To plan the lesson you will need to write behavioral objectives, generalizations, learning activities and evaluation procedures as a part of the first learning experience. The second learning experience is the development of the project.

The nutrition project developed can be some type of bulletin board, display, exhibit, learning center, game, puzzle, etc. Although reading assignments, use of filmstrips, films, etc. are acceptable learning experiences, these activities are not complex and creative enough for this project.

## LEARNING EXPERIENCE I: DEVELOPING A LESSON PLAN

### Objective:



After completing the required activities, and/or optional activities, plan a lesson around any nutrition concept of your choice.

### Activities:



1. Read Study Guide A: Terminology Used in Lesson Planning (pp. 233-238).
2. Complete Form I: Lesson Planning Sheet according to the directions (p. 239).

### Optional Activities:

1. View the filmstrip "Selecting Appropriate Educational Objectives" by W. James Popham. (Ball State University Educational Resources - G 3806 and 38061)
2. Read Health Education by Robert D. Russell, Chapters 11 and 12.
3. Read Creative Home Economics Instruction by Valerie M. Chamberlain and Joan Kelly, Chapters 1, 2, 3, and 5.
4. Read Preparing Instructional Objectives by Robert F. Mager, Chapters 1-5.
5. Do a search of curriculum guides, textbooks, card catalogues, etc. to find ideas for different types of activities appropriate to your teaching area and/or level that can be used in explaining your nutrition concept.

6. View the filmstrip "Alternative Measurement Tactics for Education Evaluation" by W. James Popham. (Ball State University Educational Resources - 4903 and 49031)
7. Read the School Health Program by Alma Nemir and Warren G. Schaller, Chapter 20.

## STUDY GUIDE A: TERMINOLOGY USED IN LESSON PLANNING



2

A lesson plan is a specific and detailed guide for the teacher to use in teaching a lesson on any given day. Included in a lesson plan are the concepts, behavioral objectives, generalizations, learning activities with a detailed description of what, how, and when activities are to be performed by the students, and some means for evaluating the lesson to determine if the objectives have been met. The following is a brief explanation of each of these components in lesson planning.

A. Concepts - The key idea, topic, or main thought which is to be covered. When all concepts and sub-concepts are listed they can serve as the subject matter outline. An example would be:

Concept: Nutrients Found in Food

- Sub-concepts:
1. Protein
  2. Carbohydrates
  3. Fats
  4. Vitamins
  5. Minerals
  6. Water

These sub-concepts could be further broken down into other sub-concepts.

B. Behavioral Objectives - A guide used to determine a course of action. An objective is the ultimate outcome of the directed action. A performance or behavioral objective is useful to the extent that it specifies what the LEARNER must be able to DO or PERFORM when s/he is demonstrating her/his mastery of the objective. Know, learn,



understand are not behavioral in nature and should not be used as verbs in behavioral objectives. The three classifications of objectives are described here with some examples from the various levels of each domain.

- (1) Cognitive objectives - also called knowledge objectives, deal with knowledge, those facts, generalizations, and concepts which must be known about a specific subject.

Examples: (a) The student will be able to label foods in each of the four basic food groups. (knowledge)

(b) The student will be able to construct a food mobil showing the four basic food groups. (application)

- (2) Affective objectives - also called attitude objectives, deal with the development of interests, attitudes, and values which students should possess about a specific subject.

Examples: (a) The student will acknowledge the existence of the four basic food groups by selecting foods from each of the four food groups. (receiving)

(b) The student will assume responsibility for planning meals at home for one week using the basic four as a guide. (valuing)

- (3) Psychomotor objectives-also called skill objectives, deal with the development of manipulative skills and abilities. These skills include: communicating, critical thinking, getting along with people, identifying and using resources and creativity.

Examples: (a) The student will taste unusual foods from each of the four food groups. (perception)

(b) The student will guide peers and younger students in selecting foods from the basic four food groups by example. (complex overt response)

Remember that behavioral objectives must include an ACTION verb. A list of such action verbs for the various levels of the three domains is briefly described in Appendix A of Section IV.

C. Generalizations - A statement which expresses an ideal, is an underlying truth and has an element of universality. Generalizations are basic ideas, principles that describe or explain facts. Generalizations are generally brief statements written in terms that can be understood by your intended audience. There are three levels of generalizations.

- (1) Level 1 - A simple statement of fact, definition, description, analogy, identification or classification.

Example: Milk is a food.

- (2) Level 2 - Shows a relationship among ideas or makes comparisons.

Example: Your health is related to the food you eat.

- (3) Level 3 - Explains, justifies, interprets, or predicts.

Example: Your size is partially determined by the kind and quality of food you consume.

D. Learning Activities - The activities planned for the students to participate in at school, in the home or community. The purpose of such activities is to help the individual clarify concepts and arrive at the established objectives. Learning activities should be planned to help the individual meet objectives in the three domains: cognitive, affective and psychomotor. Variables to be considered in selecting learning activities are:

- (1) Variety - Use at least 2-3 different activities in any one class period. Also vary activities from day to day. Use favorite activities of your students, but try others.
- (2) The individual - Each person in your classroom is a different person, therefore activities selected must take into account these differences.

Consider attention span, abilities, but try to select activities that involve everyone.

- (3) Number of senses involved - The more senses used the greater will be the learning on the part of your students. Senses involving hearing usually provide the least amount of retention, while retention increases with the use of the senses of seeing, touching, smelling, and tasting.
- (4) Time of day and year - Consider how hungry or tired your students might be. Younger students become particularly excited prior to holidays, vacations, etc.
- (5) Physical facilities - Space would have to be available to perform some activities, so make sure it could be available before selecting these activities.
- (6) Yourself- Select those activities that you would feel most comfortable directing.

Learning activities should be based on behavioral objectives. Learning activities describe what the learners have to do and how they are to do it. Like objectives, learning activities, when written, begin with a behavioral verb. Example: View the film "How Children See Food." Learning activities that are planned for a daily lesson plan are written in detail with notes on film, discussion questions, etc.



From the list below, select 3 to 5 different learning activities that you would like to use in creating your nutrition project.

Place a check mark by those activities you would like to develop.



- ☐ Field trip, plan one with pre and follow-up activities
- ☐ Learning modules
- ☐ Programmed learning materials
- ☐ Filmstrip, make your own
- ☐ Write an original script for a play that could be done by your students
- ☐ Puppets, make to go with a situation story

- ☐ Role playing, set up situations
- ☐ Slides, make your own
- ☐ Flannel board
- ☐ Educational games
- ☐ Write a story book
- ☐ Exhibits and displays
- ☐ Other - list

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E. Evaluation - A means of determining if students have achieved the designated objectives. Evaluation is done on a daily basis as well as at the end of a unit of study. Evaluation does not have to be paper-pencil test. Games, bulletin boards, etc. are a couple of examples of creative, but effective types of evaluation. (Hall and Paolucci, 1970)



\_\_\_\_\_  
Name

\_\_\_\_\_  
Date

Form I: LESSON PLANNING SHEET

Complete the Lesson Planning Sheet by first selecting a nutrition concept, then write behavioral objective(s), generalization(s), learning activities to teach that concept. Tell how you would evaluate to determine if the objective(s) was(were) attained.

Nutrition Concept:

Behavioral Objective(s):

The student will:

Generalizations:

Learning Activities: (Star\*) the activity which is to become your nutrition project)

Evaluation of the Lesson:

## LEARNING EXPERIENCE II: DEVELOPING A NUTRITION PROJECT

### Objective:



Using the given concept, objective(s) and generalization(s) identified in the lesson plan, develop a nutrition project.

### Activities:



1. From Form I: Lesson Planning Sheet (p. 239) use the activity starred (\*) as your nutrition project and develop it completely. This means that your project would be ready to use with its intended audience.
2. Complete Form II: Information Sheet for Nutrition Project and attach to your completed nutrition project.
3. Share your nutrition project with others.
4. Check Form III: Evaluation of Nutrition Project (p. 242) for criteria to make sure your project is complete.

### Optional Activity:

1. To share your project with others, write to the Indiana Curriculum Materials Center, T.A.W 200, Indiana State University, Terre Haute, Indiana 47809, for information on how you can submit your project to the Materials Center.

### Evaluation:



1. Complete the self-evaluation section on Form III: Evaluation of Nutrition Project.

\_\_\_\_\_  
Name

\_\_\_\_\_  
Date

Form II: INFORMATION SHEET FOR NUTRITION PROJECT



Complete this by listing the concept, behavioral objective(s) and generalization(s) that this project specifically reaches. These would come from Form I: Lesson Planning Sheet. Answer the other questions as directed.

Nutrition Concept:



Behavioral Objective(s) covered by this project:

Generalization(s) taught by this project:

Intended age and/or grade level use of this project:

Intended use of the project: (check all that apply)

\_\_\_\_ Introduction to lesson

\_\_\_\_ Main activity designed to achieve the lesson objective(s)

\_\_\_\_ Supplementary activity designed to achieve the lesson objective(s)

\_\_\_\_ Summary of lesson

\_\_\_\_ Evaluation of lesson

\_\_\_\_ Other (please give) \_\_\_\_\_

Briefly describe the project by telling how it is to be used in your teaching situation. Use another page if necessary.

Name \_\_\_\_\_

Date \_\_\_\_\_

## Form III: EVALUATION OF NUTRITION PROJECT



④

| Criteria                                                                                        | Points Possible | Self Evaluation |
|-------------------------------------------------------------------------------------------------|-----------------|-----------------|
| Was the nutrition project planned around a concept?                                             | 5               | _____           |
| Did the behavioral objective(s) relate to the concept?                                          | 10              | _____           |
| Would the nutrition project help the students achieve the stated objective(s)?                  | 10              | _____           |
| Does the description adequately describe and explain the intended use of the nutrition project? | 15              | _____           |
| Was the nutrition project complete?                                                             | 10              | _____           |
| Is the nutrition project appropriate to teach nutrition to your students?                       | 5               | _____           |
| Is the nutrition project attractive in appearance?                                              | 5               | _____           |
| Does the nutrition project exhibit some creativity?                                             | 5               | _____           |
| Is the nutrition project durable?                                                               | 5               | _____           |
| Was the nutrition project completed and shared at the assigned time?                            | 5               | _____           |
| TOTAL                                                                                           | 75              | _____           |

COMMENTS:

CRITERION: 68-70 - Very Good  
60-67 - Good

53-59 - Fair  
52 or less - Need to do more work.

## SECTION IV

### APPENDIX A

#### CLASSIFICATION OF OBJECTIVES BY DOMAINS

##### COGNITIVE DOMAIN \*

1. Knowledge - Recalling, remembering, and recognizing: This level emphasizes facts, information, and specifics. Objectives at the knowledge level include the ability to: cite, define, identify, label, list, name, recite, reproduce, and state.
2. Comprehension - Understanding and explaining: This level is concerned with grasping the meaning and intent of material. Objectives at the comprehension level include the ability to: convert, describe, explain, give examples, illustrate, interpret, paraphrase, summarize, and tell in one's own words.
3. Application - Using ideas: Application involves using what is remembered and comprehended. Objectives at the application level include the ability to: apply, compute, construct, demonstrate, estimate, prepare, relate, show, solve, and use.
4. Analysis - Reasoning: Analyzing involves breaking material into its constituent parts and determining the relationship of these parts to each other and to the whole. Objectives at the analysis level include the ability to: analyze, associate, determine, differentiate, discriminate, distinguish, outline and point out.
5. Synthesis - Creating: Synthesis is the ability to put parts and elements together into new forms. Objectives at the synthesis level include the ability to: combine, compile, compose, create, design, develop, devise, integrate, modify, organize, plan, propose, rearrange, reorganize, revise, rewrite and write.
6. Evaluation - Making a judgment: Evaluation is concerned with the learner's ability to judge the value of ideas, methods, materials, procedures, and solutions by developing or using appropriate criteria. Objectives at the evaluation level include the ability to: appraise, assess, compare, conclude, contract, evaluate, judge and weigh.

\*Bloom, B. S. (ed) *Taxonomy of Educational Objectives*, Handbook I, 1956.  
243



## AFFECTIVE DOMAIN \*

1. **Receiving** - Attending and becoming aware: At this level the learners merely become aware of a situation, idea, or process. Some behavioral tasks associated with receiving are: accept, acknowledge, be alert, show awareness, notice, pay attention, perceive and tolerate.
2. **Responding** - Doing something about the phenomenon: In addition to perceiving a particular situation, idea, or process in responding, the learner does something with or about it. Some words and phrases used to indicate responding are: accept responsibility, agree to, answer freely, assist, be interested, show interest, be willing, care for, communicate, comply, conform, consent, contribute, cooperate, follow, obey, participate willingly, read voluntarily, respond, visit, and volunteer.
3. **Valuing** - Developing attitudes: Valuing means that the learner accepts the worth of an object, idea, belief, or behavior and also shows a preference for it. Because valuing relates to developing attitudes, some of the following words can be used to formulate objectives at this level: adopt, assume responsibility, behave according to, choose, commit, desire, exhibit loyalty, express, initiate, prefer, seek, show concern, show continuing desire to, and use resources to.
4. **Organization** - Arranging values systematically: This level includes organizing values, determining interrelationships among them, and establishing a hierarchy of the dominant ones. Since organization is arranging values in priority according to a system, some words that can be used to establish behavioral objectives at this level are: adapt, adjust, arrange, classify, conceptualize, disclose, group, rank, and reveal.
5. **Characterization** - Internalizing a set of values: At the highest level of achievement in the affective domain, beliefs, ideas, and attitudes are integrated into a total philosophy of life, or world view. It is extremely difficult to measure achievement objectively at this level. However, some behaviors that may be associated with characterization follow: act upon, advocate, defend, display, devote, exemplify, exhibit, expose, influence, justify behavior, maintain, serve, support, and show consistent devotion to.

\*Kathwohl, David R. B. S. Bloom and B. B. Masia. *Taxonomy of Educational Objectives*, Handbook II, 1964.

#### PSYCHOMOTOR DOMAIN \*

1. Perception - Recognizing and detecting sensory cues: At this level the learner becomes aware, through the five senses, of objects, qualities, and procedures. Some words that describe behaviors at this level are: detect, feel, hear, listen, observe, perceive, recognize, see, sense, smell, taste, view, and watch.
2. Set - Becoming ready to act: Set is a mental, physical, or emotional readiness for a particular kind of action or experience and the willingness to respond to it. Some words that describe behavior at this level are: achieve a posture, assume a body stance, establish a body position, place hands, position the body, sit, stand, and station.
3. Guided response - Imitating and practicing: This involves practicing the action under supervision through imitation or trial and error. Some words that describe behavior at this level are: copy, duplicate, imitate, manipulate with guidance, operate under supervision, practice, repeat, and try.
4. Mechanism - Increasing efficiency: At this level a learned response becomes habitual and is performed with some degree of skill and confidence. Behavioral tasks include the ability to: conduct, complete with confidence, demonstrate, execute, increase speed, improve efficiency, make, pace, produce, and show dexterity.
5. Complex overt response - Performing automatically: The learners perform more complicated acts automatically, without hesitation, efficiently, and with a high degree of skill and self-sufficiency. Some words and phrases that describe behavior at this level are: act habitually, advance with assurance, control, direct, excel, guide, maintain efficiency, manage, master, organize, perfect, perform automatically, and proceed.

\*Simpson, Elizabeth J. "Classification of Educational Objectives, Psychomotor Domain," Illinois Teacher, Winter, 1966-67.



Chamberlain, Valerie M. and Joan Kelly.  
Creative Home Economics Instruction.  
New York: Webster Division, McGraw-  
Hill Book Company, 1975.



## RESOURCE PERSONS (A Learning Module)

developed by

Mary Anne Church  
Graduate Student  
Ball State University

### INTRODUCTION

The community resources available in the community (apart from the school) include all persons, places or objects that have educational value. To take advantage of these resources, you the teacher, must be aware of them and know how to take full advantage of their personal and professional experience. The most often used resource is the resource person which is defined by Hall and Paolucci as:

professional members of the community, skilled workers in occupational fields related to your content area, homemakers, or persons who have found satisfying ways of using their creative abilities. They may be used in many different ways, according to their educational backgrounds and the nature of their contributions. (Hall and Paolucci)

The benefits derived by students when a resource person visits the classroom include:

- personal contact with members of the community
- knowledge of practical application
- stimulation of student to learn more
- clarification of points made during discussions or in the text
- opening new doors for disadvantaged children by opening the eyes of the community to a need of your students
- variety in the classroom presentation
- accurate and recent material from an authority



There are also benefits to the resource person who has participated in a class presentation. These benefits include:

- pride and enjoyment from sharing their experiences
- a chance for involvement in the school
- learning more about your program

In the first learning experience of this module, criteria will be established for choosing a resource person. Once you have chosen the appropriate resource person, there are steps to follow in planning the experience to make it a success. These steps will be outlined in Learning Experience Two. Resource persons should not just lecture, but make their presentations, using a variety of techniques. The Third Learning Experience will cover some of these methods. The Fourth Learning Experience will deal with evaluation of the resource person and student participation.



## LEARNING EXPERIENCE I: CHOOSING A RESOURCE PERSON



Objectives: After completing the activities:

1. Develop a set of criteria useful to your students in choosing a resource person.
2. Choose a resource person from your community that would be an effective guest for your classroom.

Activities:



1. Read Study Guide A: Developing Criteria for Choosing a Resource Person (p. 251).
2. List the criteria you would look for in a resource person.
3. Look over Sample I: Checklist for Choosing Appropriate Guest Speakers, (p. 252) as suggested criteria for rating a possible resource person.
4. If you have not completed a community survey, do so to know of all possible resource persons available to you. Directions for developing and completing a community survey are given in Learning Module: Community Survey (pp. 71-116).
5. Determine possible nutrition resource people in your community. Use Study Guide B: Possible Nutrition Resource Persons (p. 253) as a guide.
6. Circle one of the resource persons identified in your community that you would like to have in your classroom.

Optional Activity:

1. Develop a form using your criteria for choosing a resource person. Use Example 1 as your guide.

Evaluation:

1. Set your criteria aside for awhile, then check it later for its appropriateness.



4

## STUDY GUIDE A: DEVELOPING CRITERIA FOR CHOOSING A RESOURCE PERSON



2

The first step in developing criteria for choosing a resource person is to write objectives that the resource person would be fulfilling. You have to know what you will expect from the person before you can determine if he/she can fulfill that need. A personal contact with a prospective resource person will help in developing this criteria. Include in these objectives specific class and individual student gains in both the cognitive and affective domains. This will make developing the criteria much easier.

List your idea of what a 'perfect' resource person would do. Use your imagination to view how the class will react to the resource person and how the resource person would interact with the class. Think of all the problems that could arise and how this 'perfect' person would handle it.

Take all of the ideas listed and write them in a question form. These are the questions you should ask yourself everytime a guest speaker(s) is(are) coming to your class. If no one is meeting your standards, review your criteria--your ideal may be unattainable and students may be missing a valuable experience from a resource person.

# SAMPLE I

## CHECKLIST FOR CHOOSING APPROPRIATE GUEST SPEAKERS

Resource Person \_\_\_\_\_

Date \_\_\_\_\_

Objective: (List objective(s) for class on day of resource person)

Directions: Place a checkmark (✓) in the column that represents your feelings as to whether or not a guest speaker would fulfill your needs.

| Criteria                                                          | Yes | No | Unsure |
|-------------------------------------------------------------------|-----|----|--------|
| <u>Overall Experience</u>                                         |     |    |        |
| 1. Is this the best means for reaching the objective?             |     |    |        |
| 2. Is it part of the learning sequence?                           |     |    |        |
| 3. Does the time period allow for adequate coverage of the topic? |     |    |        |
| 4. Will the information be authentic, accurate and up-to-date?    |     |    |        |
| <u>Specific Resource Person</u>                                   |     |    |        |
| 5. Is the person genuinely interested in teaching young people?   |     |    |        |
| 6. Does the person avoid expressing strong prejudices?            |     |    |        |
| 7. Does the person speak in terms the students can understand?    |     |    |        |
| 8. Is the speaker able to cope with students' questions?          |     |    |        |
| Total:                                                            |     |    |        |

Criterion:

0-1 No's Speaker sounds appropriate

2 No's Re-evaluate needs and situation

3 No's Look for another speaker or change the learning experience

Comments:

## STUDY GUIDE B: POSSIBLE NUTRITION RESOURCE PERSONS



2

When looking for resource persons for your classroom to make a presentation on a nutrition related topic, turn to your community. Although you will probably find many, you as the teacher will have to be discriminating to select the individual(s) who will be the best resource person for a given topic. Some of

the following suggested listing of resource persons in the area of nutrition may be presenting some views other than the traditional ones, but the students need to be exposed to these views since they are part of our society. Exposure in the classroom with the proper discussion and exploration can be of benefit to the students.

Resource persons in the area of nutrition may include: (check those you would find in your community)

- |                                                                  |                                                                      |
|------------------------------------------------------------------|----------------------------------------------------------------------|
| <input type="checkbox"/> public health nurse/doctor              | <input type="checkbox"/> home economics teacher                      |
| <input type="checkbox"/> dentist                                 | <input type="checkbox"/> food service personnel                      |
| <input type="checkbox"/> Red Cross worker                        | <input type="checkbox"/> restaurant owner                            |
| <input type="checkbox"/> parents of different ethnic backgrounds | <input type="checkbox"/> baker                                       |
| <input type="checkbox"/> child welfare agent/social worker       | <input type="checkbox"/> farmer                                      |
| <input type="checkbox"/> mother/father with nutrition background | <input type="checkbox"/> food manufacturer                           |
| <input type="checkbox"/> parent whose hobby is cooking           | <input type="checkbox"/> parents that have visited a foreign country |



\_\_\_ dietician/nutritionist

\_\_\_ diabetic or heart patient  
on special diet

\_\_\_ grocery store/health food  
store owner

\_\_\_ fast food service manager

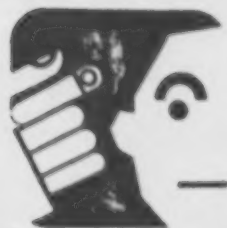
\_\_\_ person on a special diet, i.e.  
vegetarian

\_\_\_ historian with information  
on food throughout the  
ages

Can you list others in your community?

\_\_\_  
\_\_\_  
\_\_\_  
\_\_\_

## LEARNING EXPERIENCE II: PLANNING FOR A RESOURCE PERSON



1

### Objective:

After completing the required activities, plan a visit by a resource person by completing a planning sheet.

### Activities:



2

1. Read Study Guide C: Planning for a Resource Person (pp. 256-257).
2. Complete Form I: Preplanning for a Resource Person (p. 258).

### Optional Activity:

1. Develop a pre-activity to encourage student interest and make them more receptive to the speaker. Use Pre-Activity form from Learning Module: Field Trips as a guide in completing this activity. (pp. 301-302)

### Evaluation:



3

1. Look back through Form I and your resource person for completeness of your pre-planning. Add any extra duties that your resource person might need help with.

## STUDY GUIDE C: PLANNING FOR A RESOURCE PERSON



2

When inviting a resource person to your classroom, the educational value is dependent upon the quality of the pre-planning for the visit. Before a resource person is invited to come, the teacher and students should plan together what they want to accomplish by having a visitor come speak and determine if the resource person will help achieve the planned objectives. Once you have decided to have a resource person, there are six steps to follow for effective planning.

1. Invite the resource person(s). Include in the invitation all vital information that will give the speaker an idea of what to expect. Some suggestions are: a) interest of the class; b) educational level of the group; c) a short list of questions that may be asked; d) type of participation (an example would be guest speaker, panel discussion, or debate); e) time limitations of the class period. These suggestions should be worded into an invitation written by the teacher, student or the class.
2. Clarification of the purpose of the visit. This is discussed when the decision to have a resource person is decided but should be clarified just before the visit. Pre-activities such as research into the topic, and interest builders such as films and stories, help prepare the students.

3. Planning with students, their roles in receiving the resource person. Inviting persons into your classroom should serve as a social learning as well as an educational learning. Students "can share responsibility for meeting the visitor, bringing him to the classroom, caring for his coat, helping with his equipment, introducing him to the group, and getting him started." (Mehl, Mills, Douglass and Scobey)
4. Planning to be a receptive audience. Student behavior is often assumed to need no discussion. To make the visit the best for students and the resource person(s), spend time talking about showing appreciation, asking questions and talking to each other.
5. Planning with students, their role in helping the visitor. If the resource person needs help with equipment or assistance with demonstrations, assign students ahead of time. Discuss when students will be able to ask questions or share information. Remember to be able to adapt to the situation.
6. Planning for the termination of the visit. Delegate a student to orally express appreciation for the group. This student may also invite the resource person(s) to stay and watch other school work or to return later. Another student should be in charge of a written thank you note. (Mehl, Mills, Douglass and Scobey)

Form I: PRE-PLANNING SHEET FOR A RESOURCE PERSON



Complete this form using the resource person(s) and activity chosen earlier in the module.

Objective(s):



Name of Resource Person(s): \_\_\_\_\_ Date of Visit \_\_\_\_\_

Write an invitation considering:

1. Interest of the class
2. Questions that will be asked
3. Type of participation
4. Time limitations
5. Other

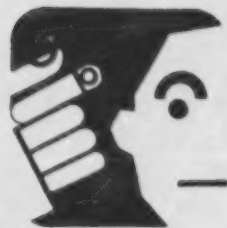
Assign activities of the students:

1. Greeting -
2. Introducing the resource person -
3. Helping the resource person -
4. Oral thank you -
5. Written thank you note -
6. Others (list) -

Pre-activity: (Optional)



### LEARNING EXPERIENCE III: ACTIVITIES TO DO WITH RESOURCE PERSONS



#### Objective:

After completing the required activities, plan a lesson including a resource person.



#### Activities:

1. Read Study Guide D: Classroom Techniques Using Resource Person(s) (pp. 260-269).
2. Think back over possible resource persons in your community. Discuss some tentative resource persons with others in your field.
3. Using one of the techniques discussed in Study Guide D and the resource person(s) chosen in Learning Experience I, plan the learning experience using Form II: Planning Sheet for Traditional Discussion Techniques (p. 270).

#### Optional Activities:

1. Read chapter 8 of Creative Home Economics Instruction by Valerie M. Chamberlain and Joan Kelly.
2. Develop follow-up activities for the resource person experience.
3. View filmstrip, Interviewing by English Composition for Children, Series 4. Pied Piper Production, 1974.

#### Evaluation:

1. Self check the effectiveness of the Form II: Planning Sheet for Traditional Discussion Techniques after it has been used.



## STUDY GUIDE D: CLASSROOM TECHNIQUES USING RESOURCE PERSONS



### Introduction:

There are two ways that resource persons may be used in the classroom. First, as a guest speaker who talks, presents audio-visual aids, and answers questions raised by the pupils and teacher. Second, as a person that may be interviewed by one or a group of students outside of the classroom. This interview may then be reported to the whole class. For the educational value of the resource person to be evident, adequate planning and the use of appropriate discussion techniques is necessary.

After a resource person and topic have been selected and the pre-planning taken care of, the actual class day must be planned with care. Some considerations in planning this day are given in the next few paragraphs.

### Seating Arrangements

The placement of the students in the classroom plays an important role in the effectiveness of the resource person. The seating arrangement can promote discussion, participation, interest and overall communication. The teacher should sit with the students, preferably on the outer limits of the seating arrangement. When using any of the discussion techniques explained later in this study guide, the seating placement should allow panel members to sit across from each other. The other students should be placed so they have good vision to view nonverbal clues of the participants.

The seating arrangement is a simple part of classroom management that can make a difference in the effectiveness of a resource person. (Chamberlain and Kelly)

#### Discussion Leader

The discussion leader is the guiding force that sets the comfortable and informal atmosphere of the discussion. This leads to spontaneous and honest expression of feelings and opinions during discussions with resource persons. A discussion leader may be the teacher or in high school classrooms, one or more students may serve as a leader.

Discussion leaders must:

1. Think on their feet to rephrase or clarify ideas.
2. Keep their ideas to themselves.
3. Control emotionalism of the group.
4. Keep the discussion moving and involve everyone.
5. Keep distractions to a minimum.
6. Summarize and end the discussion. (Chamberlain and Kelly)

If students serve as discussion leaders or are handling the entire class, it is important for the teacher to remain in the classroom while the resource person is making his/her presentation.

#### Method of Presentation by the Resource Person(s)

The resource person may bring a variety of methods into the classroom. These might include panel discussion, debate, symposium, forum or colloquium. An outcome of using these varied methods is to expose your students to the different ideas and opinions on a

given topic. Each presentation made is different and therefore has specific guidelines which should be followed. A description of when and how to use some of these methods is presented as sub-topics of this study guide. After a reading of this material, one should be able to select the method most appropriate for his/her situation.

## STUDY GUIDE D: CLASSROOM TECHNIQUES USING RESOURCE PERSONS

### Panel Discussion

**Purpose:** To air views on a selected topic on which a mutual decision is not reached.

**Procedure:** A panel of five to nine members are seated around a table in view of the students. The discussion leader introduces the topic, usually in the form of a question, and selects a panel member to begin the discussion. Each member or small group, when using students, gives a brief (three to five minutes) prepared but informal talk on the selected topic. This gives the students background information on the topic. After everyone's presentation, questions or reactions from other panel members are allowed. Once this informal exchange is made, audience participation is invited. Questions are directed to individual panel members and the discussion is continued.

**Conclusion:** The discussion leader then summarizes the main ideas and principle sides of the issue discussed and thanks the participants.

**Evaluation:** Write a short reaction paper  
Quiz  
Role play situation for a suggested solution  
Behavior of class during and after the discussion

**Suggested Topics:** What should the role of multi-vitamin supplements be in the different life cycles (children, teens, adults):  
What is the role of the community service available to help in nutrition planning?  
What are some nutrition myths and their origin?  
What is the role of parents, community or food service personnel in promoting positive nutrition attitudes and behavior?



## Debate

**Purpose:** To persuade others to your way of thinking.

**Procedure:** Choose a topic that has fixed positions that can be argued. Two teams consisting of three to five members are seated across from each other with the class seated so all debators are visible. Begin by allowing a pro team member to give reasons for favoring the issue. A con team member then gives reasons for being against the issue. Continue in this fashion until all members have had an opportunity to present their side. Each should select the strongest argument and support it with statistics and quotes from expert sources.

After everyone has stated their arguments, team members may respond to statements by their opponents. New arguments may not be brought up but additional supportive data may be used. Resource persons used as debators should be experts on the issue through investigation of the topic and/or practical application.

**Conclusion:** The discussion leader should summarize briefly the basic arguments, then thank the participants.

**Evaluation:** Participation in discussion following the debate  
Recall of evidence supporting an issue  
Reaction paper including their opinion  
Bulletin board or display using information from the debate

**Suggested Topics:** The effects of poor prenatal nutrition should (should not) be a punishable offense.  
Fad diets are (are not) harmful to your health.  
Additive warnings should (should not) be placed on all food labels.

### Symposium

**Purpose:** Investigate one problem of current interest.

**Procedure:** Select three to five speakers with specialized knowledge of the topic to be discussed. Begin by allowing each speaker a specific length of time to present one aspect in which they have gained expertise. After everyone has spoken, ideas and questions may be clarified between symposium participants. A discussion including the class may then be allowed. The chief value of this technique is to provide background information on a subject discussed by well-informed experts.

**Conclusion:** Summarize by reviewing participants and their subjects, then thank everyone for their participation.

**Evaluation:** Simulation games  
Test over ability to synthesize information  
Extra reports  
Bulletin board, skits, or role play

**Suggested Topic:** Careers in the nutrition field  
Management of different types of restaurants  
The school lunch program  
Food production as it relates to daily nutrition  
Teaching nutrition information

### Forum

**Purpose:** Two or three speakers offer different points of view on an issue.

**Procedure:** This is a formal presentation. Each participant states his side of the issue and then fields questions from the class. The class can voice opinions and ask for the participants to react to them. There is no discussion among forum participants. This technique offers students an opportunity to listen to well-informed resource persons present several sides to a controversial topic.

**Conclusion:** The discussion leader should keep the discussion moving and keep on the topic. When time is gone the leader should summarize by briefly stating major contributions and thanking the participants.

**Evaluation:** Relevance of student questions  
Depth of student opinions  
Audience reaction to differing opinions  
Reaction paper

**Suggested Topics:** Food Additives and Preservatives  
Vegetarian Diets  
Nutrition and Cancer

### Colloquium

**Purpose:** Two panels, one of knowledgeable resource persons and the other of students who ask questions.

**Procedure:** After introducing the panel members, questions are asked by the student panel directly to a member of the resource panel. This type of discussion allows the student to ask the questions they feel are pertinent to the topic. The resource person panel must be carefully chosen so they do not become too technical or talk above the students' heads. The student panel should be chosen for their interest in the topic and their ability to ask clearly stated and appropriate questions. Advance preparation must be made by the student panel for this to be a worthwhile discussion. After some dialogue the discussion leader may encourage the rest of the class to participate if their questions have not been answered.

**Conclusion:** There can be a review of important points brought out and the participants should be thanked. If students seem to have more questions than time allows, the panel may be invited back or some written correspondence may take place to answer all questions.

**Evaluation:** Completeness of questions  
Depth of questions  
Class participation and enthusiasm  
Written summary

**Suggested Topics:** Causes of Poor Nutrition  
Signs of Malnutrition  
Changing Role of the Mother (family) in Nutrition  
Education

## Interviewing

**Purpose:** A means to utilize resource persons in the classroom without the planning problems discussed earlier. Interviews need adequate planning to be successful.

**Procedure:**

1. Develop objectives of interview.
2. Choose person to be interviewed and set up a date. Tell him/her the purpose of the interview.
3. Research the area of expertise of the resource person in order to develop useful questions.
4. Develop good general questions plus some specific ones that will be helpful to the class.
5. Before conducting the interview, decide how it will be recorded for use in the classroom.
6. Practice interview by role-playing with someone. (McDonald and Nelson)

The planning should be done by the students to be an extra educational experience. The class may develop questions that they want the interviewer to answer.

If everyone in the class will be participating in interviews, time should be spent developing their listening and questioning skills. If students are aware that a silence may be because the resource person is gathering his/her thoughts, it will lessen their embarrassment and keep them from filling in with questions and/or comments. Questioning should be friendly and honest. The student should have practice in questioning and keeping the interview on the right track. Role plays can serve this purpose and lessen the fear the students are experiencing. (Garrett)

In addition to the steps used in planning the interview, some basic guidelines to follow in conducting the interview include:



1. Be courteous. Consider the other person's convenience before your own.
2. Have a list of questions ready so you will not omit asking for important facts.
3. Encourage the person to talk by listening intelligently and not interrupting.
4. Have paper and pencil with you or other means (such as a tape recorder) to record your notes. If tape recorder is to be used, be sure to secure the person's permission.
5. Write a "thank-you" note to the person who gave you the interview. (McDonald and Nelson)

Form II: PLANNING SHEET FOR LEARNING EXPERIENCE



Complete this form using any of six techniques discussed and the resource person(s) and activity chosen earlier in the module.

Objective(s):



Name of Resource Person(s): \_\_\_\_\_ Date of Visit \_\_\_\_\_

Topic:

Procedure:

Type of Presentation Mode - Consider room arrangement, student involvement, questions to be asked, etc. in outlining the activities for the day of the resource person(s).

Evaluation: Describe type of evaluation methods that are to be used.

Follow-up activities:

## LEARNING EXPERIENCE IV: EVALUATING THE VISIT

### Objective:



1

After completing the required activities, develop an evaluation device to be used in evaluating student behavior in response to a resource person.

### Activities:



2

1. Read Study Guide E: Evaluation Involving Resource Persons (pp. 272-273).
2. Review evaluation devices listed below. As an example of one of these look over Sample II: Rating Scale for Self Evaluation of the Interview (pp. 274-275).

#### Cognitive

tests - quizzes  
essay  
supply or recall  
selection

#### Affective

checklists  
rating scales  
scorecards  
report forms  
sociometric techniques

3. Develop an evaluation device for a learning experience involving a resource person. Use Form III: Evaluation Device for a Resource Person (p. 276).

### Evaluation:



3

## STUDY GUIDE E: EVALUATION INVOLVING RESOURCE PERSONS



2

The evaluation of a resource person is a two-fold process. The students should be evaluated for their preparation, comprehension and cooperation during the visit from a resource person. The resource person should be examined for his/her effectiveness and other desired criteria. Both of these aspects must be evaluated to see the real worth of a resource person as part of your classroom teaching.

For student evaluation a variety of evaluation devices are available. The real value of any learning activity comes in evaluating the experience according to clearly defined objectives. Develop these objectives before you begin. Then, develop an instrument to measure these objectives. Vary your evaluation to include teacher evaluation and self evaluation. Some types of evaluation which can be used include tests, quizzes, written report forms, check lists, and rating scales.

In addition to student evaluation, the resource person should also be evaluated to determine if he/she met your students' needs. After the visit discuss with your students the following questions:

1. Did the presentation fulfill the purposes set up for the experience?
2. What new knowledge, skill, understanding, or appreciation was gained? Can this new learning be applied to the problems under consideration?

3. What principles were defined that are applicable to other situations?
4. Is the activity worth repeating? If so, what improvements can be made in the planning and carrying out of the experience? (Hall and Paolucci)

After the evaluation a resource card file should be started or this person(s) added to an existing file.\* The name and address of the resource person along with topic(s) that were presented, a summary of the principles covered and an evaluation of how well the needs of the student were met should be included on the card. This file will help you or your colleagues later when planning for a guest speaker.

\* Resource file was described and discussed in the Learning Module on Field Trips.



SAMPLE II: RATING SCALE FOR SELF EVALUATION OF THE INTERVIEWER (6)

Objective: To evaluate an interview conducted by a student fulfilling desired criteria.

Directions: Rate yourself by circling the rating that best fits, using 2 and 4 when you feel your interviewing technique falls between descriptions. Underline the phrases that best describe your interview. Total your score at the end.

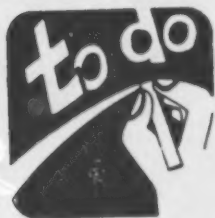
| Criteria       | Poor                                                                             | Average                                                                             | Excellent                                                                 |
|----------------|----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| 1. Conduct     | 1<br>Four or more people conducted interview<br>Everyone asked questions at once | 2<br>3<br>Two persons conducted the interview<br>Orderly                            | 4<br>5<br>One person directed the interview<br>Orderly                    |
| 2. Conduct     | 1<br>Unsure of self<br>Impolite<br>No expression of thanks                       | 2<br>3<br>Some confidence or over confidence<br>Thanked person                      | 4<br>5<br>Confident<br>Put person at ease<br>Gracious,<br>Thanked person  |
| 3. Conduct     | 1<br>Uninterested<br>Argued key points<br>Interrupted                            | 2<br>3<br>Some interest<br>Bored by end<br>Disagreed politely<br>Seldom interrupted | 4<br>5<br>Very attentive<br>Never disagreed<br>Interrupted                |
| 4. Preparation | 1<br>No preparation<br>No research<br>No questions prepared ahead                | 2<br>3<br>Some preparation<br>Some questions, but mostly yes/no type                | 4<br>5<br>Prepared with informal questions<br>Accurate knowledge of topic |

| Criteria      | Poor                                                                                                    | Average                                                                                    | Excellent                                                                             |
|---------------|---------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 5. Appearance | 1<br>Unappropriate<br>for interview<br>with pro-<br>fessional                                           | 2<br>Appropriate<br>dress                                                                  | 4<br>5<br>Neat<br>Appropriate<br>dress<br>Very professional                           |
| 6. Time       | Too short or<br>too long<br>Carried ques-<br>tioning too<br>far<br>Wouldn't allow<br>person to<br>leave | A little carried<br>away with ques-<br>tioning<br>Didn't cover<br>topic in time<br>allowed | Information gathered<br>in moderate time<br>period<br>Appropriate for<br>time allowed |

Total \_\_\_\_\_

Criterion: 28-30 Very good  
 25-27 Good  
 21-24 Fair  
 20 or less - Need to improve

Form III: EVALUATION DEVICE FOR A RESOURCE PERSON



Complete this form by developing an evaluation device to measure student knowledge or to measure effectiveness of resource person(s).

Title:

Resource Person(s):

Objective(s):

Directions:

Criteria:

Criterion.



4

Name \_\_\_\_\_

Date \_\_\_\_\_

## Resource Person Module

Objective: To evaluate the planning sheets for resource persons.

Directions: Score the plans you have completed on this module from 0 to the maximum points given for each characteristic.

## CRITERIA:

Points Possible      Self Evaluation

Preplanning

- |                                                                                 |   |       |
|---------------------------------------------------------------------------------|---|-------|
| 1. Appropriate criteria was developed for selecting resource persons.           | 3 | _____ |
| 2. Objective(s) are stated in behavioral terms.                                 | 2 | _____ |
| 3. Type of participation is fitted to the needs and desires of the students.    | 2 | _____ |
| 4. The needs of resource persons are considered in the planning.                | 2 | _____ |
| 5. Students are given ample opportunities to participate in various activities. | 2 | _____ |
| 6. Pre-activities create interest in the topic.                                 | 4 | _____ |

Learning Experience

- |                                                                                                     |   |       |
|-----------------------------------------------------------------------------------------------------|---|-------|
| 7. One of the six techniques was chosen for its effectiveness of the topic being discussed.         | 5 | _____ |
| 8. Procedures dealing with the physical facilities are planned for the benefit of the presentation. | 2 | _____ |
| 9. Follow-up activities build on knowledge received during resource person's visit                  | 4 | _____ |

Evaluation

- |                                                                  |   |       |
|------------------------------------------------------------------|---|-------|
| 10. Evaluation of the experience was considered in the planning. | 4 | _____ |
|------------------------------------------------------------------|---|-------|

Criterion: 28-30 - Very good  
25-27 - Good

Total \_\_\_\_\_  
21-24 - Fair  
21 or less - Need to do further work



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## FIELD TRIPS (A Learning Module)

developed by  
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### INTRODUCTION

Community resources available for use in education consist of people and places. Each community is rich in both. Getting students into the community provides a fuller and more meaningful education experience for them. A working definition of a field trip, is study outside the classroom as a means of implementing certain objectives. There are three types: 1) visiting field trips; 2) collecting field trips; and 3) field investigations. (Brehm) In this module we will be looking at visiting field trips.

Visiting field trips can:

1. Arouse interest in a new unit of study
2. Promote interest during a unit
3. Review what has been covered
4. Furnish information most effectively
5. Help students reach objectives
6. Enrich educational experiences
7. Improve public relations (Miller and Smith)

If any of these advantages fit a need of your classroom, this module will take you on a field trip by showing you how to determine effectiveness of the trip, plan for the experience, evaluate the trip, and develop enrichment activities.

## LEARNING EXPERIENCE I: DETERMINING USEFULNESS OF EXPERIENCE



### Objectives:

1. After completing the required activities, and/or optional activities, decide on an appropriate field trip experience.
2. After deciding on the field trip experience, determine its usefulness for your grade level, nutrition subject matter and objectives.



### Activities:

1. Complete Form I: Field Trip Possibilities (p. 281).
2. Read Study Guide A: Criteria for Usefulness (p. 283).
3. Look at the students in your class(es) to note the possible impact a field trip experience would have. Is there any reason to believe a student would not benefit? (Just reflect on this, no written response is required.)
4. Using the field trip experience you identified on Form I, work through Form II: Planning Sheet for Effectiveness of a Field Trip (p. 284).

### Optional Activity:

1. View the filmstrip "The School Journey" by Basic Skill Films, 1958. (Ball State University Educational Resources, G 5207)



### Evaluation:

1. Use the Self-Check on the Effectiveness of a Trip as provided, to check your responses on Form II.
2. Discuss Form III with another teacher in your content area for feedback.

Form I: FIELD TRIP POSSIBILITIES



A. Check (✓) all possible field trips that are available in your area.

- ☐ factories that prepare certain foods
- ☐ specialty shops that carry foods from other countries
- ☐ markets specializing in meats, fruits, vegetables, fish
- ☐ ethnic markets (Chinese, Italian, Indian, Jewish, etc.)
- ☐ local, county, state and federal government agencies
- ☐ health and welfare agencies
- ☐ clinics (health and/or others)
- ☐ radio and television studios
- ☐ grocery store
- ☐ natural or health food store
- ☐ fruit orchard
- ☐ dairy
- ☐ farm
- ☐ social work agencies
- ☐ hospital
- ☐ food service establishment
- ☐ bakery
- ☐ packing, pickling, bottling, canning, or condensing plants
- ☐ stockyard

\_\_\_ school food service facility

\_\_\_ warehouse or storage plant

\_\_\_ wholesale food market

\_\_\_ well-baby clinics

\_\_\_ others \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

B. Circle those checked (✓) that you would find appropriate for your class(es).

C. Choose a field trip from your list of possible trips to use as an example in completing this module. List the field trip that you plan to develop \_\_\_\_\_

## STUDY GUIDE A: CRITERIA FOR USEFULNESS



2

As with all learning experiences, the usefulness of a field trip to students must be examined. To help you determine the appropriateness of the learning experience, establish your own criteria by answering the following questions as given by Hall and Paolucci :

1. Will the field trip experience be the best means for teaching the goal?
2. Is the experience suited to the maturity and interests of the students?
3. Is it part of a planned learning sequence?
4. What can the students learn through the use of this community resource?
5. Is the trip feasible from the standpoint of time, cost and scheduling?
6. Will the field trip be likely to lead into other related and valuable activities?
7. Is the material to be covered known well enough by the teacher to insure adequate planning?
8. Can the experience be utilized effectively within the time that can be devoted to it?
9. Does the location permit suitable travel arrangements to be made?
10. Will the information that is presented be authentic, accurate, and up-to-date?
11. Will the experience encourage critical and constructive thinking? (p. 293)

A positive response to a majority of these questions should provide you with criteria to make it possible to determine the usefulness of a planned field trip.



Form II: PLANNING SHEET FOR EFFECTIVENESS OF A FIELD TRIP



Answer the following questions regarding your planned field trip experience.

Grade Level:

Objective(s):

1. Are there other possible means to achieve this goal?
2. What is an appropriate age for this field trip?
3. What nutrition concept is being studied?
4. What will the students be looking for?
5. How much time will be involved? cost?
6. What activities will this trip lead to?
7. What do you as the teacher need to know?
8. How much time is being devoted to this nutrition concept?
9. What travel arrangements need to be made?
10. What are the qualifications in terms of giving accurate and up-to-date information of the place being visited.
11. What will be required of the students? (Hall and Paolucci)

How do these responses check against the criteria established in Study Guide A (p.283)?

## LEARNING EXPERIENCE II: PLANNING PROCEDURE



1

### Objective:

After completing required activities, plan a field trip experience complete with behavioral objectives, sample questions, working schedule and pre-trip planning lists.



2

### Activities:

1. View filmstrip "The School Journey" by Basic Skill Films, 1958. (Ball State University Educational Resources, G 5207)
2. Read Study Guide B: Effective Planning (pp.286-288).
3. Using Form III: Planning Sheet (p. 289) prepare a working schedule and a pre-trip list of things to be done and a tentative time schedule.
4. Read Study Guide C: Permission Slips (pp. 290-291).
5. Read Study Guide D: Community Resource File (p.292).
6. Complete a lesson plan to be used on the day you involve your students in the planning of the field trip. Use Form IV: Lesson Plan for Student Planning Day (p. 294).



4

### Evaluation:

1. Check to see if Forms III and IV are completed.

## STUDY GUIDE B: EFFECTIVE PLANNING



2

As teachers we have all experienced the failure of a terrific idea because we didn't think through all the possible problems. Since field trips involve removing students from their regular routine, care must be taken to avoid possible problems, yet make the trip worthwhile. Good planning is the key.

The steps in planning can be divided into two categories:

1) preplanning, before involving the students and, 2) planning, involving the students.

### Before Involving Students:

1. Survey the community for possible trips. This technique is covered fully in the module: Developing Social Surveys found in Section I of these materials. By doing this activity, doors may be opened to places that you hadn't thought of using. This will also cause you to examine the goals you wish to achieve by seeing the resources of the community.

2. Decide on a destination. With elementary students the teacher may just decide. In upper grades, the students may assist in making this decision. Criteria for the selection of field trips was discussed fully in Learning Experience I of this module.

3. Become acquainted with school policy on field trips. Find out what steps must be taken to comply with school permission slips, parent permission slips and transportation guidelines. Discuss your

plans with the principal. (S)He may have meaningful suggestions and guidelines. If you do a number of field trips you might want to consider having liability insurance.

4. Contact field trip destination for possible dates and times. This may be done by a personal visit, telephone call or a letter. At this time a preview trip for you and/or a small group of students may be arranged.

Involving the Students:

1. Discuss with the students what the purpose of the trip will be. They may also be asked to contribute ideas of what should be given to the person conducting the tour so he/she will know what to show them.

2. A set of questions may be developed with the students' help. These questions will guide the teacher in grasping the interests of the students and may also serve as a follow-up activity that students answer after the trip. Questions can cause the students to examine the trip more closely. The questions may serve as a tool teachers can use to help the tour guide if the students begin to lose interest.

3. Develop a schedule with students. This may be a teacher guided activity that allows for student input. For high school classes the students may be put into a situation that requires time budgeting both for the class and themselves. For elementary teachers, this may reinforce the idea that the trip is not just for fun but to learn about new things. A complete schedule should be given to the school office in case of emergencies.

4. Conduct, clothing and safety measures should be discussed with each class before a field trip. Allowing the students to make the rules may serve to make them more responsible.

5. A class journalist may be chosen to record all events of the trip. This record would serve as an excellent method of reviewing the trip the next day. This may not be appropriate for younger children.

6. A thank you card committee should be established while planning the trip. Cards should be sent to all who shared in making the trip possible--guides, parents, drivers and the company or establishment visited. These should be sent a few days after the trip.

7. Develop the background essential for intelligent participation on the trip. Time should be planned to include enough information to make the trip profitable, but not enough to make the trip seem worthless. A day may be spent giving the students background and pre-planning. Another day would be spent for the trip. The third day would be used for follow-up activities.

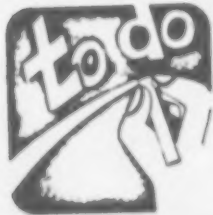
#### Other Suggestions for Complete Planning

1. Transportation plans should include all arrival times and departure times with enough time allowed for possible delays. The preview trip may help in planning the transportation. If a meal is to be eaten, special arrangements should be made ahead with a restaurant. Check with the principal about possible problems that may arise.

2. Confirm all times and dates the day before the trip.



Form III: PLANNING SHEET



Using the information in Study Guide B, complete this teacher's planning sheet using the field trip experience chosen on Form I. This basic form can be used to organize most field trips.



Topic of Field Trip:

Objective(s) of field trip:

Before Involving Students (List what you need to do before involving the students):

Involving the Students (List what you will do with the students in planning this field trip)

Tentative time schedule of trip:

## STUDY GUIDE C: SAMPLE PERMISSION SLIPS



2

Permission slips should be distributed and collected from all students whenever removing students from school property. These should then be kept on file at the school as an indication of parental permission. This permission slip usually does not waive liability in case of an accident. The permission slip does serve as a method of communication between teacher and parent. School policy will have to be followed if permission slips are not returned.

The following are two examples of how permission slips may be worded if your school does not have prepared slips for you to use:

### SAMPLE I

#### PERMIT FOR CHILD TO TAKE FIELD TRIP WITH TEACHER AND RELEASE OF CLAIM FOR DAMAGES\*

I, parent or guardian's name, parent of child's name  
do hereby consent that such child may accompany teacher's name  
on a field trip to destination on date and in  
consideration of the teacher giving her time in the arrangement and  
supervising of such trip, do hereby personally, and on behalf of such  
child, absolve and release the teacher and the Board of Education from  
any claim for personal injuries which might be sustained by such  
child while on such trip, or while returning to his or her home.

Parent or guardian's signature

Date

\*Smith and Miller

SAMPLE II

A Cover Letter and Returnable Permission Slip

October 3, \_\_\_\_\_

Dear \_\_\_\_\_,

The children in teacher's name room at Elmwood School are planning to visit destination on date as a part of their scheduled school experiences. We will appreciate having you sign the bottom portion of this letter and return it to school by date. This indicates that you have granted permission for your child to go on the trip.

Yours truly,

\_\_\_\_\_  
*Teacher's signature*

October 3, \_\_\_\_\_

I hereby give my permission for child's name  
to go on a field trip to destination on date.

\_\_\_\_\_  
*Parent or Guardian's signature* \*

\*(Brehm)

## STUDY GUIDE D: COMMUNITY RESOURCE FILE



The importance of having a community resource file was stressed by Hall and Paolucci when they said:

"To guide yourself or other teacher in future years, you will find a file of possible field trips very helpful. Such information as the following might be contained on each file card:

1. Name, address, and phone number of the place to visit.
2. Visiting days and convenient hours.
3. Suggested transportation.
4. Time required.
5. Admission fee, if any.
6. Nature of the guide service.
7. Eating facilities (if needed).
8. Name of the person to be contacted.
9. Specific details about where to meet the person in charge.
10. Age or grade level for which the experience is most suitable.
11. Nature of printed material available from the company.
12. Evaluation of the trip for its intended purpose." (p. 294)

Such information cards may be in an index file in the school office or library. This general file would allow access to many more resources for possible field trips. If this is not available, an index card file of appropriate field trips for your area in your classroom would be appropriate. This file may be useful to the students during cooperative planning days.

The following is an example of one possible community resource file card. Of the criteria previously stated, this example does not include information about admission fees, eating or evaluation suggestions. These may be added if desired.

SAMPLE COMMUNITY RESOURCE FILE CARD

Louisville Public Schools

Division of Curriculum

Name of Firm: \_\_\_\_\_ Address: \_\_\_\_\_

Person to Contact: \_\_\_\_\_ Phone \_\_\_\_\_

Transportation: \_\_\_\_\_

Subject Areas: (Put in order of importance) - If primarily for  
science first--then follow by other subject areas trip might  
be used for.

Maximum size group: \_\_\_\_\_ Age Limitation: \_\_\_\_\_

Grade Levels Suitable For: \_\_\_\_\_ Time Required: \_\_\_\_\_

Days-Hours visiting permitted: \_\_\_\_\_ Guide Available: \_\_\_\_\_

Advance Notice Requested: \_\_\_\_\_

Availability of Motion Pictures: At Plant \_\_\_\_\_ For Teacher \_\_\_\_\_

Title: \_\_\_\_\_ For Pupils \_\_\_\_\_ For Schools \_\_\_\_\_

Length: \_\_\_\_\_

Other Material Available: \_\_\_\_\_

Places of Interest in Vicinity: \_\_\_\_\_

Nature of Activities: \_\_\_\_\_

Comments: \_\_\_\_\_

(Smith and Miller)

(Might want to include information on safety concerns, i.e., any  
special dress.)



Form IV: LESSON PLAN FOR STUDENT PLANNING DAY



Complete this lesson plan\* for the day you will involve your students in the planning of the field trip. It will be helpful to go back to Form III (p.289) to see in what ways you planned to involve the students. These should be incorporated into this lesson plan.

Nutrition Concept:

Behavioral Objective(s):

Generalization(s):

Learning Experiences: (Be specific)

Evaluation:

\*See Module: Develop a Nutrition Project if you need help in writing concepts, behavioral objectives, generalizations, learning experiences and evaluation for this lesson plan. This Module is found in Section III of these materials.

### LEARNING EXPERIENCE III: EVALUATING THE FIELD TRIP EXPERIENCE



#### Objectives:

1. After completing the required activities, develop at least one evaluation device for a field trip.
2. List two additional methods of evaluating the field trip.

#### Activities:



1. Review evaluation devices available in methods textbooks and/or review those you are currently using to evaluate field trips.
2. Develop an evaluation device such as a test, quiz, score card, checklist, or rating scale for your specific field trip. A sample evaluation device is found on page 297.
3. Do a search of text books for other ways of evaluating a field trip.
4. Record below two (2) additional ways of evaluating the field trip.
  - a.
  - b.

#### Optional Activities:

1. Read *Creative Home Economics Instruction*, by Valerie M. Chamberlain and Joan Kelly, Ch. 5.
2. Read *Home Economics Evaluation* by Aleen Cross.



④

#### Evaluation:

1. Do a self-check of possible evaluation methods. Use the list below to check if you have at least two different evaluation techniques.

- |                                                             |                                                          |
|-------------------------------------------------------------|----------------------------------------------------------|
| <input type="checkbox"/> relevant discussion                | <input type="checkbox"/> written reports                 |
| <input type="checkbox"/> behavior - conduct                 | <input type="checkbox"/> summaries                       |
| <input type="checkbox"/> enthusiasm of students             | <input type="checkbox"/> group reports                   |
| <input type="checkbox"/> conducive to learning              | <input type="checkbox"/> bulletin boards                 |
| <input type="checkbox"/> improvements suggested by students | <input type="checkbox"/> reporting to class              |
| <input type="checkbox"/> participation                      | <input type="checkbox"/> creating dramatization or skit  |
| <input type="checkbox"/> further independent study          | <input type="checkbox"/> writing stories, poems, reports |
| <input type="checkbox"/> desired                            | <input type="checkbox"/> panel discussion participation  |
| <input type="checkbox"/> sharing                            |                                                          |

# SAMPLE

## RATING SCALE FOR FIELD TRIP



### Directions:

Rate each item by placing the number in the blank provided. Ratings of 5 are for those in which you have strongest agreement and 0 for those in which you have strongest disagreement. Total your ratings.

2

|                                                                                        | 5 | 4 | 3 | 2 | 1 | 0 | <u>Rating</u> |
|----------------------------------------------------------------------------------------|---|---|---|---|---|---|---------------|
| 1. The field trip was worth the time spent in the planning and carrying out the plans. |   |   |   |   |   |   | 1. _____      |
| 2. The field trip created interest in the unit of study.                               |   |   |   |   |   |   | 2. _____      |
| 3. The field trip helped me to reach the unit objectives.                              |   |   |   |   |   |   | 3. _____      |
| 4. The field trip helped to reinforce material covered in class.                       |   |   |   |   |   |   | 4. _____      |
| 5. The field trip helped to enrich my educational experiences.                         |   |   |   |   |   |   | 5. _____      |

Total

Note: This rating scale, when completed by the students, would help the teacher determine the worth of the completed field trip.

## LEARNING EXPERIENCE IV: DEVELOPING ENRICHMENT ACTIVITIES



1

### Objective:

After completing required activities, write a pre-field trip activity and a follow-up activity to correspond with the appropriate behavioral objectives for the field trip planned in this module.

### Activities:



1

1. Read Part I of Study Guide E: Enrichment Activities for Field Trips (p. 299).
2. Study examples of pre-enrichment activities (pp. 300-301).
3. Complete Form VI: Pre-Field Trip Activity (p.302) for the field trip you have been planning in this module.
4. Read Part II of Study Guide E: Enrichment Activities for Field Trips (p. 303).
5. Study examples of follow-up enrichment activities (pp. 304-306).
6. Complete Form VII: Follow-up Activity (p. 307) for the field trip you have been planning in this Module.
7. Read Study Guide F: Field Trips as Part of Classroom Instruction (pp. 308-309) some ideas on how you might relate field trips in nutrition to other areas of study in the elementary grades.

### Evaluation:



1



## STUDY GUIDE E: ENRICHMENT ACTIVITIES FOR FIELD TRIPS (Part I)



2

Field trips are used by teachers to further educational goals. They are also an effective way to arouse interest in a new topic, to rekindle interest in a current topic or as a review. To make the field trip as effective as possible combine it with pre-trip and follow-up activities.

### Pre-Trip Activities

The purpose of pre-trip activities is to stimulate interest in the field trip. Some examples where individual students would be involved include: 1) interviewing a person involved with area of study connected to the trip; 2) taking a survey before a field trip; and 3) role-playing a situation similar to one being visited.

To involve the entire class you may choose one of the following: 1) create a game or word find to stimulate students to research the field trip coming up; 2) conduct a sensitivity poll consisting of statements that the student must respond to how the community feels may cause the students to examine feelings before the trip; and 3) taking a pretest/post test could be beneficial as a pre-field trip activity to determine student growth.

The difficulty of pre-trip activities lies in giving the students enough information to make the trip worthwhile but not too much to make the trip unnecessary. If you have a good idea of what the trip will offer your students you should have no trouble creating pre-activity experiences.

SAMPLE  
ENRICHMENT ACTIVITIES

Pre-field trip activity: Nutrition Word Find

Field Trip: Planter's Cafeteria: February 9, 19\_\_

\_\_\_\_\_  
Name

\_\_\_\_\_  
Date

Objective: Given nutrition terms, the student will recognize the word in a word find.

Directions: Find the words at the right either across, up and down, or diagonal. Circle the word as you find it.

|                           |            |
|---------------------------|------------|
| C D E F T A C P L O S T P | BASIC FOUR |
| R Q B A S I C F O U R U Q | BREAD      |
| B R M R S G N I V R E S Y | CEREAL     |
| R Z I A E U A O P O G B L | DAILY      |
| B D L M H A V S N K F S I | FRUIT      |
| T Y K R B C D O Z T R K A | MEAT       |
| V S D N L A I N H O U L D | MILK       |
| L V E G E T A B L E I C R | NUTRITION  |
| R S P C I F L H P K T E V | SERVINGS   |
| I B F R N D S T I G O R N | VEGETABLE  |
| H K T Y Q U M E A T S E P |            |
| D U O N E W S R G P I A D |            |
| N I F L W S C R M B T L S |            |

SAMPLE

Pre-Field Trip Activity: SOCIAL SENSITIVITY POLL OF NUTRITION ATTITUDE

Field Trip: McDonalds: May 17, 1975

\_\_\_\_\_  
Name

\_\_\_\_\_  
Date

Objective: Given this form, the student will record his impression of the community's attitude by checking the appropriate responses.

Directions: Read the following statements and check the number of people in your community you think agree with each of these statements.

1. Fast food companies are not concerned with nutrition.

|                |       |                 |       |
|----------------|-------|-----------------|-------|
| Nobody         | _____ | Half the people | _____ |
| A few people   | _____ | More than half  | _____ |
| Less than half | _____ | Almost half     | _____ |

2. The increased use of fast foods is the cause of many nutrition problems.

|                |       |                 |       |
|----------------|-------|-----------------|-------|
| Nobody         | _____ | Half the people | _____ |
| A few people   | _____ | More than half  | _____ |
| Less than half | _____ | Almost half     | _____ |

3. Old people have many illnesses related to poor eating habits. The cause of this is lack of money to purchase proper foods.

|                |       |                 |       |
|----------------|-------|-----------------|-------|
| Nobody         | _____ | Half the people | _____ |
| A few people   | _____ | More than half  | _____ |
| Less than half | _____ | Almost half     | _____ |

Other possible questions could be developed using other nutrition attitudes. Such as:

specific income levels  
ethnic groups  
natural foods  
specific diets

Evaluation: Tally the results and allow students to discuss in class.

Form VI: PRE-FIELD TRIP ACTIVITY



Plan a pre-field trip activity for the field trip you have been planning in this module.

Field trip name and date:

Objective(s):

Title: (of activity)

Directions:

Activity:

Evaluation: (answer key if needed)

## STUDY GUIDE E: ENRICHMENT ACTIVITIES FOR FIELD TRIPS (Part II)

### Follow-up Activities



Follow-up activities for a field trip give students a chance to share learning experiences. Such activities can range from a discussion, which is the easiest method for sharing, to written reports. Written reports allow you the chance to read the student's impressions of the trip. Such reports may be simple if just feedback is desired or more complex if critical thinking is wanted.

A second type of follow-up activity can involve a special project completed by a student or a group of students. Examples include: 1) writing for the school or community newspaper; 2) creating a display or bulletin board; 3) completing an interview or survey; and 4) creating a play, simulation or role play for the class.

Follow-up activities can be used as an evaluation of the field trip. They usually draw from the students individual experience. Emphasis should be made on interpreting the field trip experience. The purpose of follow-up activities is to enrich classroom learning.



SAMPLE

ENRICHMENT ACTIVITIES

Follow-up Activity: WRITTEN REPORT

Field Trip: Grocery Store: January 12, 19\_\_

\_\_\_\_\_  
Name

Objective: Given this form, students will  
record effects of the field  
trip experience.

\_\_\_\_\_  
Date

Directions: Tell what you have learned by completing each of the  
lines below.

1. We went to

2. We saw

3. We did

4. I enjoyed

5. We should have

6. I learned

Evaluation: The student's completeness of thought, spelling, and sen-  
tence structure are the criteria for evaluation.

SAMPLE

Follow-up Field Trip Activity: NUTRITION SOCIAL WORKER ROLE PLAY

Field Trip: Hospital or Nutrition Social Work Agency: Sept. 19, 19\_\_

Objective: Given a role play card, the student will analyze the situation and act out the role accordingly.

Direction: Read your situation card. You will have 2 or 3 minutes to think out your role. Portray your role in a way you think would be the best solution.

Situation Card

Mrs. Valdez, of Spanish background, has recently arrived in the community with her husband and two children. Her husband works as a dishwasher, and she does sewing in her home. The family is on a relatively low income.

Mrs. Valdez was referred to you, the staff nutritionist, for help in planning her family meals. Keep in mind that the Valdez family has many adjustments to make that involve not only meal planning, but also language and social customs.

HELP MRS. VALDEZ PLAN WITHIN HER LIMITED FOOD BUDGET.

Think about:

Types of food Spanish people eat--possible alternatives

Cost of imports

Nutrition - Basic Four

### Situation Card

Mrs. Valdez, of Spanish background, has recently arrived in the community with her husband and two children. Her husband works as a dishwasher, and she does sewing in her home. The family is on a relatively low income.

You are Mrs. Valdez, and you have been referred to a staff nutritionist. Some problems you have encountered include language, social customs, high cost of imported foods and an incomplete diet because of the low income.

A Spanish diet includes:

Meat: chicken, salt pork, dried fish, and ham butts

Bread and Cereal: rice and tortillas

Fruits and Vegetables: garlic, green bananas, plantain, chayote, cassava, malangas, yams, guava, mango and papaya

Dairy Products: milk

Evaluation: Consider the nutrition information given by each participant, ability to communicate problems and offer solutions. (*Training the Food Service Worker*)

Note: Keep in mind that this may be the first attempt in helping make nutritionally correct decisions in meal planning for an ethnic group. If this is the student's first role play, more instructions may be necessary.

Form VII: FOLLOW-UP FIELD TRIP ACTIVITY



Plan a follow-up field trip activity for the field trip you have been planning in this module.

Field Trip name and date:

Objective(s):

Title: (of activity)

Directions:

Activity:

Evaluation: (answer key if needed)

## STUDY GUIDE F: FIELD TRIPS AS PART OF CLASSROOM INSTRUCTION



2

The wise use of educational field trips will provide a means through which school subjects may be correlated in a meaningful way. The following material suggests possible activities brought about by the field trip, and the correlation that takes place. Nutrition education can be part of all these subjects at the various grade levels.

### Reading

1. Research reading
2. Developing new vocabulary
3. Using library for additional information
4. Reading in related fields
5. Follow-up reading stimulated by the excursion

### Oral Expression

1. Discussing value of trip
2. Deciding on things to look for
3. Sharing information gained from reading
4. Formulating questions to ask on the trip
5. Deciding on questions the trip should answer
6. Reporting to the group upon returning from the trip
7. Taking part in panel discussions
8. Explaining maps or materials used in connection with the trip
9. Creating dramatizations or skits

### Written Expression

1. Listing of questions to be asked or answered
2. Outlining plans for the trip
3. Writing letters asking permission to visit
4. Writing stories, poems, reports
5. Writing letters of thanks



Spelling

1. All words in stories and poems
2. New vocabulary peculiar to particular trip (Miller and Smith)

Social Studies

1. Learning about our community, its heritage and culture

Form VIII: EVALUATION OF FIELD TRIP PLANNING SHEETS



Objective:

Given complete planning sheets, the evaluator will score their quality on the basis of specific criteria.

④

\_\_\_\_\_  
Name

\_\_\_\_\_  
Date

Directions: Score Forms I-VII from 0 to the maximum points given for each characteristic. Place your score in the column labeled self-evaluation.

| CRITERIA                                                                                   | Points Possible | Self Evaluation |
|--------------------------------------------------------------------------------------------|-----------------|-----------------|
| <u>Follows Directions:</u>                                                                 |                 |                 |
| 1. All the forms are completed for the same field trip activity.                           | 5               | _____           |
| 2. Forms I-VII can be removed to be used as lesson plan for a field trip                   | 5               | _____           |
| <u>Objectives:</u>                                                                         |                 |                 |
| 3. The field trip activity is complete with behavioral objective(s).                       | 2               | _____           |
| 4. The objective(s) is(are) stated in behavioral terms with conditions and criteria stated | 2               | _____           |
| 5. The field trip will accomplish the objective(s).                                        | 2               | _____           |
| <u>Suitability:</u>                                                                        |                 |                 |
| 6. The field trip chosen is appropriate to grade level.                                    | 5               | _____           |
| <u>Personal Gains:</u>                                                                     |                 |                 |
| 7. You have become aware of steps in planning a field trip.                                | 2               | _____           |
| 8. The benefits of the field trip experience are realized                                  | 2               | _____           |
|                                                                                            | TOTAL 25        | _____           |

Comments:

Criterion: 24-25 - Very good  
21-23 - Good

19-20 - Fair  
18 or less - Need to do more work



Brehm, Shirley A. *A Teacher's Handbook for Study Outside the Classroom*. Columbus, Ohio: Charles E. Merrill Publishing Company, 1969.

Hall, Olive A. and Beatrice Paolucci. *Teaching Home Economics*. New York: John Wiley and Sons, Inc., 1970.

Smith, Vivian and Richard Miller. *Our Community Classroom: A Handbook of Community Resources*. Louisville, Kentucky: Division of Curriculum, Louisville Public School, 1955.

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COMMUNITY SERVICE PROJECT  
(A Learning Module)

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Ball State University

INTRODUCTION

Part of the responsibility of education in many schools is to bridge the gap between the school and the community. An effective method is to involve students in community service projects where they would be meeting a need in the community and also furthering their education. The purpose of this module is to suggest ways in which you might be able to involve your students in the community as volunteers.

Students have always been used as tutors for slower students. They have the time and patience to do things for individual students for which teachers just do not have time. This technique can be expanded to include the community where the possibilities are limitless. One of the best ways for students to learn something is to have to teach it. It doesn't matter if it is to a first grade student or a senior citizen, the student serving as the teacher will learn. In this module you will be guided through possible nutrition related community service projects. You will be planning for involvement, identifying ways of getting students involved and evaluating the experience.

## LEARNING EXPERIENCE I: POSSIBLE PROJECTS



①

### Objective:

After completing a community survey and the activities, identify at least two community service projects in which your students could participate.

### Activities:



②

1. Look at your students to establish an idea of what student abilities are. If needed, students may fill out a questionnaire or ability rating sheet to determine where they stand on nutrition knowledge and personal need.
2. If a community survey has not been conducted, do so before continuing the module. Procedures for developing a community survey are found in the Learning Module: Developing Social Surveys.
3. List all of the organizations in your area that deal with nutrition.
4. Look through possible projects listed in Study Guide A (p. 315). Check this list against the one you made in activity number three.
5. Circle at least two community service projects that would be beneficial to your students.

### Optional Activities:

1. Discuss your choices with other teachers in your field for feedback.
2. Contact the Community Coordinator in your area for suggestions.

### Evaluation:

1. Think back upon your choices for effectiveness to your students.



④



## STUDY GUIDE A: POSSIBLE COMMUNITY SERVICE PROJECTS TO INVOLVE STUDENTS



1

The following are some suggested groups or individuals with whom your students may choose to work as a volunteer in a community service project.

### Elderly:

- Meals on Wheels
- Nursing Homes
- Agencies on Aging and Aged
- Senior Citizens' Organizations

### Children:

- Special Schools - blind, deaf, handicapped
- Detention Agencies - Probation Services
- Orphanages - Children's Homes
- Elementary Classrooms
- Boys' Club
- Girl Scouts/Brownies
- Boy Scouts/Cub Scouts
- Day Care Centers

### Institutions/Agencies:

- Hospitals
- Clinics
- Department of Health and Welfare
- Red Cross
- Family Service Units
- Well-baby Clinics
- Cooperative Extension
- Veteran's Service
- Missions
- School Food Service
- Women, Infants and Childrens Program
- Food and Nutrition Expanded Program

Can you add others which would be available in your community?



2

## LEARNING EXPERIENCE II: PLANNING FOR COMMUNITY SERVICE INVOLVEMENT



①

### Objective:

After completing the required activities, plan a community service experience for your class.



②

### Activities:

1. Develop the objective(s) for a project of your choice. Record this on Form I (p. 317).
2. Read Study Guide B: Coordinating the Project (p. 318).
3. Read Study Guide C: Training Program for Community Service (p. 319).
4. Plan a community service project to involve your students by using Form I (p. 317).



③

### Evaluation:

1. Do a Self-Check of Form I for completeness in planning.

Form I: PLANNING A COMMUNITY SERVICE INVOLVEMENT PROJECT



Complete the form with all possible ideas that you can think of for each topic. Use one of the projects circled on Study Guide A.

Objective(s):

Planning:

Agency and telephone number:

Important Dates:

Guidelines:

Problems:

Solutions:

Motivational Idea: (Activity will be completed on Form II)

Training Program:

Orientation

Pre-service or on-the-job training

Follow-up activities:

Evaluation:

## STUDY GUIDE B: COORDINATING THE PROJECT



2

The organization of the community service project will determine much of its success or failure. First, think through the purpose of the project. Both you and your students need specific objective(s). After your objective(s) have been set, follow through with the following planning procedures.

1. Discuss your tentative ideas with the principal for feedback and procedure.
2. Contact the organization to determine approach and needs.
3. Develop guidelines for the students to follow plus some idea of how the agency can help make the experience positive.
4. Think through possible problems and solutions. For example, transportation, work schedules, parental consent, etc.
5. Plan a motivational lesson to develop interest among students. Include how a student will be assigned different tasks, developing objectives, time involvement and evaluation.
6. Conduct practice sessions or training programs. These could be role play situations designed to help students interact with older or younger people. This is also a time to discuss dress code, if any, being on time, manners, etc. Read Study Guide C: Training Program for Community Service Project (pp. 319-320) for further explanations.
7. Coordinate the project as a supervisor. Students should be responsible to someone at the agency that is in charge of volunteers. Continuous contact should be kept between students and supervisor, students and teacher, and teacher and supervisor.
8. Evaluate the project according to the objectives that were set at the beginning. Keep accurate records of all happenings.
9. Complete the project with follow-up activities. These may include written reports, bulletin boards, or class discussions.

Keep on top of all happenings through open communication!



## STUDY GUIDE C: TRAINING PROGRAM FOR COMMUNITY SERVICE PROJECT



2

According to Dr. Carl Smith of Indiana University, volunteers provide "all kinds of human, warm relationships but they should have an educational direction to them." (Carter and Doppen)

This direction depends on what the students will be doing. Obviously a nutrition tutor needs more training than someone working the lunchroom. How this training is approached will make as much difference as what is being taught.

Training, whether pre-service or on-the-job, has four basic parts: 1) orientation; 2) specific training; 3) opportunity for self growth or advancement; and 4) evaluation.

Training is a continuous process when working with volunteers. To alleviate fear and build confidence, guidance is needed before students begin.

1. Orientation is pointing the student in the right direction and setting the tone and mood for the program. You as the teacher are in charge of the orientation if students are going to a variety of agencies. If all students are going to the same agency, work with the supervisor there to coordinate orientation and specific training. During orientation establish goals of the program and value of student's participation. Finally, give the students some ideas of the kind of people with whom they will be working. In short, make a point to make the experience worthwhile.
2. The second step, specific training, depends on the type of job involved. This training may take place as pre-service or on-the-job training or both, and continue with follow-up training. Pre-service training may be in the form of previous classroom work. Extra time should be spent helping students use the information gained in class to be an effective volunteer. The agency should guide you as to the amount of training they usually give. Keep in mind the personal interaction skills necessary to be an effective volunteer.



3. The third step may not apply to your program, due to time restraints, but if students are in the agency long enough, allow them to move on to other tasks of greater difficulty. This gives the student satisfaction and breaks the routine.
4. The last step that applies to the classroom use of community service projects is evaluation. Included in the evaluation should be written projects and visual observation. More information on evaluation is included in Learning Experience IV, (p. 326).

### LEARNING EXPERIENCE III: GETTING INVOLVEMENT



1

#### Objective:

After completing the required activities, develop a motivational device to get students involved and interested.



2

#### Activities:

1. Read Study Guide D: Getting Involvement (pp. 322-323).
2. Read Study Guide E: Why Students Volunteer (p. 324).
3. List at least two ways to increase involvement.
4. Complete Form II: Motivational Activity (p. 325).

#### Optional Activity:

1. Read "Teen Teach Nutrition." Esther W. Shoup, *Journal of Nutritional Education*. Vol. 7, No. 3, pp. 108-109.

#### Evaluation:

1. Do a self-check of motivational devices available for use.



4

## STUDY GUIDE D: GETTING INVOLVEMENT



2

If you were trying to get volunteers for a community service project from the community, you would probably use a publicity campaign. The same goes for getting students to volunteer. Start by telling your story through the school newspaper, bulletin boards, or posters.

Attract attention by using a catchy name and/or slogan. Suggestions for doing a public relations campaign can be found in the module on Involving Parents.

The real point you need to get across to the students is what goes on in the project, what it means to the people helped and what it will mean to the volunteer. Without this information, students will not be motivated to volunteer. Without this information students will not be motivated to volunteer. If the students are being required to "volunteer" they still need to be informed of the benefits. These students also need to be accepted by their peers so publicity is useful in this situation.

Application forms may be needed for some community service projects. Keep them short and to the point. You do not want to lose students through tedious applications. Ask questions dealing with interest, times available, and expectations. Graphics, your slogan, and the name of the project may catch students' eyes if displayed in a hallway. If this is a class project, a committee may be in charge of applications once a project gets started.

Once you have volunteers, keep them happy. There should be constant feedback of both the encouraging type and the suggestion for improvement type. Your publicity campaign may also serve to keep volunteers by showing peers the good the volunteers are doing. Effective evaluation will also help keep volunteers.

If the students are volunteering as a class project, they also need activities to keep motivation high throughout the project. Opportunities to share highs and lows with the class during the project help keep students interested. Other activities such as panel discussions, guest speakers, building bulletin boards and role plays may be helpful. Motivation should be an important part of the plan for the community service project.

## STUDY GUIDE E: REASONS WHY STUDENTS VOLUNTEER



2

The following are some of the reasons why students volunteer to do activities such as the community involvement plan being described in this module.

1. To serve people
2. To satisfy an emotional need
3. For companionship - to meet people
4. They feel they have to
5. To gain respect of others
6. It looks good on a job application
7. To get experience
8. Because everyone else is doing it
9. The teacher or parent expects it
10. They feel they can do it the best
11. An impulsive act



3

Can you add other reasons why students would volunteer to participate in a project such as this?

12.

13.

14.



Form II: MOTIVATIONAL ACTIVITY



Complete this form by developing a motivational activity. Develop an activity for the project chosen in Study Guide A.

Objective(s):

Community Service Project:

Grade Level:

Title:

Motivational Activity:

Evaluation of Motivational Activity: (Answer key if needed)

## LEARNING EXPERIENCE IV: EVALUATING A COMMUNITY SERVICE PROJECT

### Objective:



After completing required activities, develop an evaluation instrument for a community service project.

### Activities:

1. Look over plans for community service project and determine the domain(s) the evaluation needs to cover. Identify in the following space. (Refer to Learning Module: Develop a Nutrition Project for assistance.)
2. Read Study Guide F: Why Evaluate? (p. 327).
3. List some evaluation devices that can be used in the affective and cognitive domains.

|           |           |
|-----------|-----------|
| Affective | Cognitive |
|-----------|-----------|
4. Review Samples I and II as possible evaluation devices of student performance (pp. 328-329)
5. Prepare or adapt an evaluation device for your classroom's community service project. Use Form III (p. 330) as your guide.

### Evaluation:

1. Do a self check of your evaluation instrument to see if it meets the needs of your program.

## STUDY GUIDE F: WHY EVALUATE:



2

Concrete evidence is needed to determine usefulness of volunteers and the Community Service Project. Without this information, school are less likely to allow school time to be spent on such activities. Agencies will also be hesitant to allow volunteers into their programs. Without evaluation the program will not improve, the training or methods of using volunteers will not change and the benefits may be lessened.

Because of the nature of volunteer programs, evaluation is not always quantitative. Many times the warm relationship between a volunteer and a child/adult is the stimulant to learning. This cannot be measured, but it is important to the evaluation. Another problem may be the accuracy of the evaluation. The wrong questions may be asked or the evaluator may be biased.

To overcome such possible problems, evaluate using the objectives. The objectives may be tangible or intangible and will be both objective and subjective. By using a combination of evaluation devices and techniques, a truer picture can be determine.

SAMPLE I

EVALUATION OF A COMMUNITY SERVICE PROJECT

Student Performance: Report Form

Objective: Record the happenings of your project by completing this form.

Name \_\_\_\_\_ Date \_\_\_\_\_

Place of Volunteer Project \_\_\_\_\_

Directions: Using the following format, state your objectives and list the activities you have carried out, complete with date started and completed. Then record the evidences of your growth and progress according to the directions. Complete this form at least once a month.

| <u>Objectives</u> | <u>Activity</u> | <u>Date</u> |
|-------------------|-----------------|-------------|
|-------------------|-----------------|-------------|

1.

2.

Evidence of Growth: List any new skills and those further developed. List new understandings gained. List changes you would make.

# SAMPLE II

## EVALUATING STUDENT PERFORMANCE BY SOCIAL AGENCY (1)

Objective(s):

Agency \_\_\_\_\_ Date \_\_\_\_\_

Name of Volunteer: \_\_\_\_\_

Directions: Check Column 1 if the service has been excellent; column 2 if it has been good; 3 if it needs improvement and 4 if not applicable.

Criteria:

|                                                                                                                | 1 | 2 | 3 | 4 |
|----------------------------------------------------------------------------------------------------------------|---|---|---|---|
| 1. The volunteer has been willing to work under the directions of agency supervisor.                           |   |   |   |   |
| 2. The volunteer has had regular attendance.                                                                   |   |   |   |   |
| 3. The volunteer has worked harmoniously with others.                                                          |   |   |   |   |
| 4. There has been evidence the student has enjoyed working here.                                               |   |   |   |   |
| 5. There has been evidence that the volunteer rendered helpful service.                                        |   |   |   |   |
| 6. The volunteer was able to assist in certain phases of the instructional program.                            |   |   |   |   |
| 7. The student has special talents, skills, or experience which were used to enrich the instructional program. |   |   |   |   |
| 8. There was evidence that the children (adults) enjoyed working with the volunteer.                           |   |   |   |   |
| 9. The volunteer did not hinder efforts to maintain everyday schedules.                                        |   |   |   |   |
| 10. The volunteer had enough pre-service training to make her/him of value.                                    |   |   |   |   |
| 11. The volunteer was easily trained on-the-job.                                                               |   |   |   |   |
| Total                                                                                                          |   |   |   |   |

Criterion Level: 11 Excellent  
12-22 Good  
23-33 Needs Improvement



FORM III: EVALUATION DEVICE



Create or adapt an evaluation device using this form as a guide. Be sure to include all sections.

Title:

Date:

Name of Agency:

Name(s) of Volunteer(s):

Name of Service Project:

Directions:

Criteria:

Criterion Level:

Form IV: SELF EVALUATION OF COMMUNITY SERVICE PROJECT



Objective:

Given the completed module, the evaluator will check the completeness of the module.

Name \_\_\_\_\_ Date \_\_\_\_\_

④ Directions: Answer each question by checking the appropriate column.

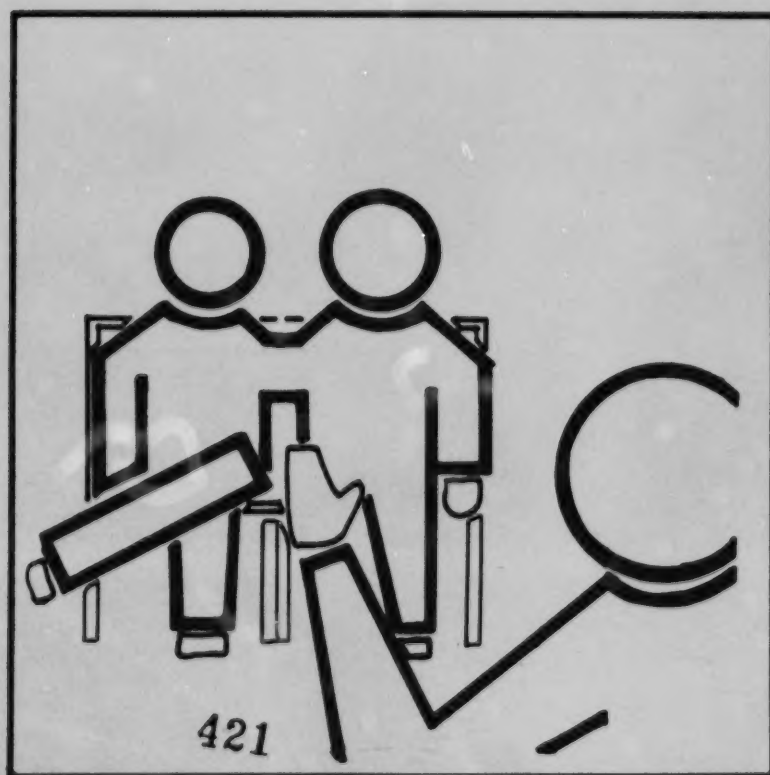
| CRITERIA                                                                                                                                | YES   | NO    |
|-----------------------------------------------------------------------------------------------------------------------------------------|-------|-------|
| 1. Is a completed community survey available?                                                                                           | _____ | _____ |
| 2. On number 1, did you complete a community survey to determine possible stations for students to participate in nutrition projects?   | _____ | _____ |
| 3. Did you determine the level of students' needs?                                                                                      | _____ | _____ |
| 4. Did you select at least two community service projects that are beneficial to your students and would be available to your community | _____ | _____ |
| 5. Did you develop behavioral objectives for the community service project chosen?                                                      | _____ | _____ |
| 6. Did you complete the planning sheet Form I?                                                                                          | _____ | _____ |
| 7. Did you list at least two ways to increase involvement?                                                                              | _____ | _____ |
| 8. Did you develop a motivational activity using Form II?                                                                               | _____ | _____ |
| 9. Did you list possible evaluation devices in the affective and cognitive domain?                                                      | _____ | _____ |
| 10. Did you develop or adapt an evaluation device for your classroom's community service project?                                       | _____ | _____ |

Comments:



Carter, Barbara and Gloria Doppen. *Organizing  
School Volunteer Programs*. New York: Citation  
Press, 1974.

**involving parents**





INVOLVING PARENTS\*  
(A Learning Module)

developed by

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INTRODUCTION

Five days a week for 37 weeks, six hours a day, you are with your students. That leaves seven days a week, 52 weeks and 18 hours a day that parents are with the children. Because of this large time difference, parents are expected to have a greater effect on student performance. So why not work together. A combined effort by parents and teachers is assumed to be more beneficial for the students. This keeps teachers and parents working together, not apart.

In 1976 the President of National Parent-Teachers Association, Carol Kimmel, had the following to say about parent involvement:

When school leaders learn how to harness the concerns and talents of parents in constructive ways, they will have a source of power far exceeding nuclear energy. But like nuclear energy, that potential is, for the most part, unused and, if placed in unfriendly hands, dangerous to the goals we mutually share. I urge that we not wait for an explosion, but plan for the peaceful and constructive use of parent power. (Kimmel)

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\* Although the term parent is used in this module, this does not preclude other adults (guardians, grandparents, etc.) who have an interest in and/or responsibility for the student.



Many schools are increasing their parent power. The methods vary from parent support at home to instruction by parents participating in the classroom as aides. A research study was conducted in Flint, Michigan in 1963 to determine the effects of parent support and instruction on students' reading ability over a five-month period. The parents participated by encouraging the child and increasing the child's time spent reading by reading to the child or having the child read to them. The results showed an overall gain of 5.4 months in reading level compared to 2.7 months overall gain in the control group. (Smith and Brahce)

Another example from Prince George County in Maryland, involved parents in home economics class for elementary students in weekly seminars. The topics were those being discussed with the children which provided experiences for discussion at home. (Baird) The field of nutrition will fit into this type of parent involvement easily. Well-informed parents increase the successfulness of a nutrition unit for any age student.

A research study conducted by Helen Smith in Muncie, Indiana showed that the students and their parents who participated in the parent education program in nutrition had an increased participation in the school lunch program. In a general evaluation of the nutrition program, the parent had many favorable comments on how the program had helped them to become more aware of nutrition. It is that type of involvement which schools need to provide for parents. The objectives and letters sent to parents in this program are found in Appendix A (pp. 355-363) of this module.

According to Barbara Hicks, Director of Education of the National Live Stock and Meat Board, the home should be equal partners in teaching nutrition. Unless this equality is obtained, nutrition education taught at the school will be less than effective. Furthermore, as parents are involved in the education of their children, they too become learners and as parents increase their knowledge and awareness of proper nutrition, they can be motivated to apply the nutrition information in their own lives as well as those of their children. In order to use the home and parents as a means of providing nutrition information, parents must be reached and become involved and this has been a problem of the past. It is hoped that some of the activities presented in this module will help you find ways of involving parents.



①

Before proceeding on through this module, complete the pre-test which follows. There are no right or wrong answers, but rather this is a self check to see where you are in involving parents in your classroom.

\_\_\_\_\_  
Name

\_\_\_\_\_  
Date

### EVALUATION: INVOLVING PARENTS

#### Pre-Test: Communication Between Parents and Teachers



④

There are many ways of parent/teacher communication and participation available for your use. The following is a checklist for measuring the extent to which you are helping your students through the parents.

#### Circle Appropriate Response:

1. Do you have room meetings of the parents in your classroom in addition to the larger meetings of the PTA? Yes or No
2. As you look over the content of your room meetings and your PTA gatherings, are each of the four major concerns of parents adequately covered?
  - (a) Child growth and development . Yes or No
  - (b) Your school's program. Yes or No
  - (c) Neighborhood agreements about children's behavior. Yes or No
  - (d) Community, state, national and world affairs that affect children. Yes or No
3. Do you and other teachers hold at least one meeting at the start of each school year to explain the year's program to parents? Yes or No
4. Do you have many opportunities for informal chats with parents?
  - (a) Before and after group meetings. Yes or No
  - (b) At work and play meetings. Yes or No
  - (c) At incidental, unplanned occasions in the course of the year. Yes or No
5. Do parents come to school to observe your classroom in its daily operation? Yes or No

6. Do parents participate in your classroom program?
  - (a) On special occasions such as field trips, parties and so forth. Yes or No
  - (b) In the regular daily program of instruction. Yes or No
7. Do you confer with parents about their observations and participation?
  - (a) Beforehand Yes or No
  - (b) As a follow-up Yes or No
8. Do you send home frequent, brief personal notes of praise about individual children? Yes or No
9. Do you send parents a newsletter reporting on the activities of your group as a whole? Yes or No
10. Do older children in your school, pre-adolescents and adolescents share in home-school relations in ways appropriate to their age?
  - (a) In planning for home visits. Yes or No
  - (b) In planning for parent observation and participation. Yes or No
  - (c) In conferences regarding their work and behavior. Yes or No
  - (d) In group meetings. Yes or No

## LEARNING EXPERIENCE I



①

**Objectives:** After completing the required activities:

1. Realize the purposes of involving parents in classroom activities by listing your reasons for involving parents.
2. List at least 3 activities in your nutrition unit that parents could be involved in.

**Activities:**



②

1. Read Study Guide A: Why Involve Parents (pp. 339-340).
2. Develop your list of reasons for involving parents. These may be the same as in Study Guide A, plus many of your own personal reasons.
3. Read Study Guide B: Possible Activities Involving Parents (p. 341).
4. Think through your curriculum for situations that parents would be a beneficial addition to your classroom. Discuss your ideas with other teachers.
5. List 3 activities that involve parent participation in the nutrition area. Consider having at least one of these activities outside of the school.
  - 1.
  - 2.
  - 3.

**Optional Activity:**

1. Discuss successes and failures of parent involvement with other teachers in your area.



③

**Evaluation:**

1. Read back through your reasons for involving parents. Keep in mind student and parent needs. Add any other reasons you can think of for involving parents.



## STUDY GUIDE A: WHY INVOLVE PARENTS?



2

The most logical answer to this question is "so they can see what we are doing." This answer is a valid reason but does not convey the entire purpose. We also involve parents because they are part of the team that educates the children. Well-informed parents encourage and help their children in the 12 years they are in school. No way is this better achieved than by having parents in the classroom and in the school as an everyday affair. (Hymes)

For many school, party time and show-off time are the only time parents are encouraged to come to school. This practice is not enough if the students are to benefit. "Education is the how. It is the problem and the problem solving that precede the final performance. It is the day-by-day guidance and leadership and a give-and-take that build up to something you can finally see." (Hymes) Parents should be invited to observe and participate so they may see and participate in this building process.

Another reason to involve parents in the classroom is so they may take over some individualized work. There are many instances where parents can work with a special need of one student or a small group that you cannot get to. Parents can also participate by doing some of the teacher's routine work so you are free to work individually with students. This might include duplicating material, reading spelling words, grading papers or reading to small groups. In

every classroom there are mothers, fathers, and grandparents willing to help in these capacities if given the opportunity and the guidance.

Parents can also be involved cooperatively in sex and drug education. (Kappelman and Ackerman) Since many parents feel this should be taught in the home, encouragement by teachers for parents to participate, helps to alleviate some fear. Parents may help in developing curriculum and finding expert resource persons. Many times by including parents in this education, teachers can impress upon parents that schools are supplementing the information children receive in the home.

If parent involvement is new in your school, give the program some time. Eventually parents will see the value for their children and begin to participate. The benefits from individualization and enrichment will soon become evident.

## STUDY GUIDE B: POSSIBLE ACTIVITIES INVOLVING PARENTS



In most schools, parents that come into the classroom serve as either skilled personnel or helpful resource persons. Examples of this include carrying out a particular learning technique; participating as members of a panel, forum, or symposium; giving demonstrations; and serving as consultants on special problems. (Hatcher and

Halchin) Parents are also invited to special class functions either to get to know other parents or view student performance.

The following are examples of specific nutrition projects in which parent involvement will work well:

- Prepare a snack meal that includes plant, animal and engineered food
- Tasting party of favorite fruit, vegetable, or bread
- Share food customs
- Prepare nutritious party treats
- Demonstrate lunch packing or freezing, canning or drying of foods
- Serve as a guest speaker on world food crisis, food customs, ethnic backgrounds, various religions, and fad diets
- Help with planning a special classroom meal.
- Prepare different forms of a food such as orange juice (fresh, frozen, dry, etc.)
- Set up a class grocery store
- Conduct an on the scene interview with cameras and tape recorders
- Do a parent food survey to determine eating habits of their children
- Help prepare a nutrition display or make nutrition buttons
- Serve as a field trip supervisor
- Plant a small garden at school (particularly good for preschool programs where students go all summer)

The possible activities to involve parents is limitless. A survey of the parents in your school may open other doors for ways of involving parents in your nutrition curriculum.

## LEARNING EXPERIENCE II: PLANNING FOR PARENT INVOLVEMENT



1

Objectives: After completing the activities:

1. Plan a public relations program to encourage parents to participate in your classroom.
2. Write a lesson plan for an activity involving parents.

Activities:



1

1. Read Study Guide C: Encouragement for Parents (pp. 343-344).
2. Study examples of public relations programs found on pages 346 and 347.
3. Plan a public relations activity to encourage parents to participate in your classroom. Use Form I: Public Relations Activity (p. 348).
4. Read Study Guide D: Planning for Parent Involvement (pp. 349-350).
5. Discuss other planning suggestions with teachers in your area.
6. Develop a lesson plan for a parent involvement activity. Use the Form II: Lesson Plan for Parent Involvement (p. 351).

Optional Activity:

1. Read literature on public relations programs for a better understanding of the activities involved.

Evaluation:



4

431



## STUDY GUIDE C: ENCOURAGEMENT FOR PARENTS



2

Many parents have unpleasant memories of their school days. These memories have to be overcome before parents will be on your side. PTA has tried to bridge this gap but many times the meetings fall flat. To bridge this gap, teachers need to become working members of the PTA. This will help gain the confidence of many parents. Also, teachers need to inform parents of the goals of education and new ideas being used. Get behind PTA and meet the needs of the parents so they will be better prepared to meet the needs of their children. .

However, it is recognized that a number of parents do not feel comfortable coming into the school so ways of involving these parents outside of the school setting must be considered. A couple of ways in which to do this might include: 1) setting up displays or school information tables in grocery stores, bank lobbies, malls, etc. and/or 2) sponsor an informal coffee in a place other than the school to meet with parents.

To gain the support of the parents of your students, be honest and use courtesy and tact. These traits along with being careful of the tender ego will help us to get what we want and help us give them what they want. (*Public Relations Gold Mine*) Because public relations is a delicate job, keep the following in mind:



1. People are mirrors and reflect your attitude of the other person.
2. First impressions should be friendly, competent, and understanding.
3. "No one ever wins an argument. Try to get the other person to see your point of view without injuring that tender ego of his." (*Public Relations Gold Mine*)

Because of the importance of involving parents, the next part of this module will deal with the building of a public relations program. It is hoped that such a program will attract parents to become more involved with their children's learning.

#### Building a Public Relations Program

Begin by planning your program to control the events of the school. Your program should have goals, a priority scale for reaching various publics, a course of action and a list of who does what and when. Try to be the offense, not the defense.

To help you accomplish the goals you've set down, the following is a list of basic strategies for an effective public relations campaign.

1. Use persons in key positions to be chief spokesman.
2. Use community leaders to reach other citizens.
3. Be honest when discussing school system problems.
4. Keep your program continuous.
5. Repeat important messages many times.
6. Use all available methods of communication.
7. Stress the progress and achievements of your students, but have a continuous desire for improvement.

8. Be friendly.
9. Invite participation by parents and community members.
10. Personalize the program by using people instead of figures and ideas.
11. Time all events so they have the greatest impact on the community. (*Public Relations Gold Mine*)

Once you have organized what you want to accomplish, look at the variety of ways to accomplish your goals. A variety of media methods are available and each reaches different ages and types of parents. Choose at least three that you can afford and use them to their fullest potential.

Since the newspaper is free, establish a friendly and honest relationship by issuing frequent factual press releases and answering questions as fully and frankly as possible. (*Public Relations Gold Mine*) There are five elements to keep in mind that make a story newsworthy. They are 1) locality; 2) timeliness; 3) novelty; 4) human interest; and 5) people. By being familiar with these elements you will be more likely to spot news stories. A couple of sample ideas on developing a public relations program are given.

SAMPLE I

PUBLIC RELATIONS PROGRAM

- Objective(s):
1. To orientate 7th grade students and their parents to the junior high school.
  2. Inform parents of ways to help students adjust to new situations.

Program Title: Webster Groves - Things That New 7th Graders Should Know

Leaders: Elementary and Junior High Principals  
Counselors and School Nurse

Type of Media: Color slide series with taped narration booklet.

Sample Activity: Have current 7th grade students write an essay about "Things That New 7th Graders Should Know." This forms a discussion group about the role parents can play in the adjustment to junior high.

Time Schedule:

- January 23 - First orientation meeting for parents, show slide series and hand out booklets.
- April 2 - 6th graders visit junior high building
- September 3 - Get acquainted party for 7th graders
- September 23- Special assembly for study techniques and tips

## SAMPLE II

### PARENT ACTIVITY PUBLIC RELATIONS PROGRAM

Objective(s): 1. To encourage parents to participate actively in their children's nutrition education.

Program Title: P I N E --Parent in Nutrition Education

Leaders: Mrs. Jones - Principal  
Mrs. Patience - School Nurse  
Mrs. White - 7th grade Home Economics Teacher  
Mrs. Cook - School Food Service Director

Type of Media: Newspaper articles - Education Editor  
Slide presentation at PTA meeting  
Letters sent home with students

There is also a poster contest among students.  
The theme is "Get 'Em Involved in P I N E"

#### Sample Activity: Newspaper article

The teachers at Northview Elementary School are involving parents in teaching nutrition to the students through a program PINE - Parents in Nutrition Education. The six-month program, according to Principal Jones, "Will bring parents into the classroom to be an active participant in nutrition education." Every grade will have three hours a week devoted to nutrition and parents will serve as resource persons, teachers' aides, consultants, observers, and demonstrators. To volunteer and for more information, call Mrs. White, home economics teacher at 281-7321.

#### Time Schedule:

November 1 - Send introductory letters home  
November 4 - PTA meeting slide presentation  
November 6 - Newspaper article  
November 6 - Start poster contest

Form I: PUBLIC RELATIONS PROGRAM



Plan a public relations program that will increase involvement in a parent program you are starting for your school. Use this form to guide you through the necessary steps.



Objective(s):

Program Title and/or Slogan:

Leaders:

Type of media and person to contact:

Sample activity to promote program: (Newspaper article, radio announcement, poster, letter sent home, etc.)

Time Schedule:



## STUDY GUIDE D: PLANNING FOR PARENT INVOLVEMENT



2

Many of us shudder at the thought of having parents in our classroom. What you don't need is someone to criticize you or disrupt your class. You may also be thinking "Is it worth the trouble?" Yes, it is worth the trouble, but how much?

If the parents are to participate, you have to prepare them for what they are to do and also allow for reaction time afterwards. Talking before and after will determine the success or failure of parent participation. Think back to student teaching and the importance of conferences with your supervising teachers. At that time, you at least had course training to fall back on, but many parents don't even have that.

The first step in planning is to work out an effective method of communication. An explanatory letter of the goals of parent involvement is a good start to communication. You also need to find time for conferences. These may be as the parent is leaving, while school work is going on or over the phone later in the day. These conferences will alleviate any misgivings the parent has, answer questions, and offer the teacher an opportunity to discuss that parent's child.

After you have thought through communication, decide exactly what you expect from the parents who participate. This should include activities and behaviors. This information should also be provided

to the parents. Examples might include what to do when the parent's child is demanding too much of the parent's time, discipline problems and personal dress and language. If you don't tell the parents, how are they going to know?

The last area that should be thought through before inviting parents to participate, is reinforcement and evaluation. The conferences should handle some of this problem, but some form of written evaluation would be beneficial to you and the parents. A checklist or rating scale filled out by parents and teachers on a weekly basis is one suggestion. Another would be keeping a diary or cooperative notebook. A cooperative notebook is shared by teacher and parent and is a place to write down questions, observations, and reinforcement. If used often and sincerely, many problems are overcome simply. To summarize,

Parent participation is a lot of work; you must:

- Explain the general idea to parents . . .
- Arrange a schedule so they can observe . . .
- Discuss their observations with them . . .
- Think out how each can help . . .
- Prepare them for the specific job they will do . . .
- Remind them of the time because busy people forget . . .
- Talk it over afterwards . . . (*Public Relations Gold Mine*)

A lot of work, yes, but it can be extremely rewarding.

Form II: LESSON PLAN FOR PARENT INVOLVEMENT



Complete this form, using one of the activities listed on number five of Learning Experience I of this module.

Nutrition Concept:

Behavioral Objective(s):

Generalizations:

Instructions for parents: (Written and verbal)

Learning Experiences: (Include what you will do and what parents are expected to do)

Evaluation: (Include evaluation of the activity for students and for the parents)

\_\_\_\_\_  
Name

\_\_\_\_\_  
Date



**Evaluation: Involving Parents (Post-Test)**

**Objective:** To evaluate activities in planning and carrying out activities involving parents.

**Directions:** Answer the following questions with one phrase or paragraph. Record the answers on this sheet. When completed, look back through the module to check your answers.

1. Look back over the pre-test checklist and identify three activities that you would like to incorporate into your classroom. ( 3 points)
  - a.
  - b.
  - c.
2. For one of the activities listed above, briefly explain why it would be of value in your class. (5 points)
3. List five basic strategies that you will find of value when planning a Public Relations Program. (5 points)
  - a.
  - b.
  - c.
  - d.
  - e.
4. What are two elements that make a happening newsworthy? ( 2 points)
  - a.
  - b.
5. List the steps you will use when planning for parent involvement. (5 points)



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APPENDIX A

PARENT EDUCATION PROGRAM  
IN NUTRITION

## OBJECTIVES FOR PARENT PROGRAM

1. The parents of third grade children should be aware:
  - a. that a variety of foods can make a difference in the growth, health and behavior of children. Vegetables are important factors in the growth and health of children.
  - b. that the values of a school lunch program include
    - 1) nutritionally adequate lunches.
    - 2) varieties of foods with fruits and/or vegetables.
    - 3) lunches prepared under sanitary conditions.
    - 4) high quality lunches at low cost.
    - 5) instructions in good food habits.
2. The parents of third grade children should become supportive of the school lunch program.
3. Third grade children of parents participating in the parent education program should better comprehend and apply nutrition knowledge.

PARENT PROGRAM  
Letter 1

THE FUTURE IS NOW

Food is the very basis for life and vital to the proper growth, health and behavior of children. What every individual eats today will affect the length and quality of his life.

Surveys conducted by the United States Department of Agriculture and public health agencies show that over 50 percent of the American people are poorly fed. Some people do not have the money to buy the proper food. Others do not know the foods their bodies need and still others are too busy to eat the right foods.

Foods contain different nutrients: carbohydrates, proteins, fats, vitamins, minerals and water which the body needs. Each nutrient has certain special jobs in building, upkeep and operation of the body. Nutrition means team work of these nutrients. Energy from food is necessary for everyone in order to stay alive. Calories should be chosen by the company they keep and "good company" is when the food contains several nutrients. Food can then supply nutrients in addition to calories. All of the necessary nutrients can be easily obtained from food providing one includes all the basic four food groups each

day:     Fruits and Vegetables  
         Breads and Cereals  
         Meats  
         Milk

The school lunch supervisor is required by federal law to follow a particular menu pattern so that each child will be offered at least one-third of his nutrient requirement for the day.

PARENT PROGRAM  
Letter 2

NUTRITION FOR THE SCHOOL-AGE CHILD

The kind and variety of foods eaten by the school-age child can do much to increase the quality of his life in the future. A school child has many problems which may affect the appetite and in turn his choice of foods. These include communicable diseases, school work, class competition and getting along with many other children. The child may also not be getting enough exercise or rest.

What are the most common symptoms found in our children which are due to poor food choices? Two national nutrition surveys in the last eight years have indicated that obesity, tooth decay and iron-deficiency anemia occur often in our children. Other physical conditions which can be partially attributed to nutritional causes include constipation, poor tongue and eye conditions, bad skin conditions, underweight and poor bone development.

Too much candy, soft drinks, bakery goods and fried snack foods do not provide adequate protein, vitamins and minerals. This type of food leads to obesity, tooth decay and iron-deficiency anemia. Eating the school lunch is the safest way to get an adequate intake of food at noon and insure that the child gets one-third of his daily requirements of the necessary nutrients.

PARENT PROGRAM  
Letter 3

WHAT'S FOR LUNCH TODAY?

Did your child have a well-balanced meal with meat, vegetables, fruits, bread and milk or a hurried snack such as a cupcake, pop and candy?

The National School Lunch Program was written to safeguard the health and well-being of children. It was meant to provide nutritious, reasonably priced lunches to school children and to contribute to a better understanding of nutrition and improved food habits. The school lunch menus have been developed to give one-third or more of the foods boys and girls need each day. Broad food choices are possible within the school lunch menus so that cultural, ethnic and religious food practices of children can be considered. It also serves to teach the child the importance of eating well-balanced meals throughout their lives.

The school lunch menus include:

- Two ounces of meat or meat alternate,
- Three-fourths cup of vegetables and/or fruits,
- One serving of enriched bread,
- One teaspoon butter or fortified margarine, and
- One-half pint of milk.

Well-fed children function better than poorly fed ones. The food children eat each day makes a difference in the way they look, the way they feel and how well they grow and learn. The school lunchroom is more than a "feeding station" and it can contribute to the total development of the child.



PARENT PROGRAM  
Letter 4

VEGETABLES FOR CHILDREN

Vegetables provide valuable sources of important vitamins and minerals necessary to help children grow and be healthy. Vegetables are low in calories and high in dietary fiber. Meat, milk and breads and cereals do not contain the same nutrients in sufficient amounts.

The yellow and green colors in vegetables usually show the presence of carotene, made into vitamin A by our bodies. Fruits and vegetables which contribute a significant amount of vitamin A to the diet are apricots, carrots, sweet potatoes, pumpkin, winter squash and spinach. Ascorbic acid (vitamin C) can be found in broccoli, cauliflower, kale, cabbage, greens and tomatoes as well as oranges and grapefruit. Green vegetables and potatoes also give us iron, some B vitamins and a little calcium. Other vegetables provide smaller amounts of these nutrients.

Do many children of ~~all~~ age do not seem to like vegetables. Here are some hints to increase the eating of vegetables by children.

1. Serve vegetables raw as well as cooked.
2. Plant a cooperative vegetable garden with your children.
3. Encourage children to help prepare vegetable dishes.
4. Cook vegetables in new ways and feature a "vegetable of the week."
5. Encourage children to participate in the school lunch with fruits and vegetables included each day.

PARENT PROGRAM  
Letter 5

COST OF LUNCHES

School lunches contain hot foods, a wide variety of main dishes and school baked products. The lunches are nutritionally adequate, attractive and moderately priced. Packed lunches seldom meet acceptable standards of good nutrition and are more expensive. Packed lunches often provide too many calories and too little protein, vitamins and minerals. It is difficult to plan a good packed lunch that is not cold, stale and lacking in appetite appeal by noon time.

Many children come to school with no lunch because they do not like a packed lunch, they do not want to prepare it or they do not want to carry it. The child may bring a little money to spend in the vending machines or a near-by store for lunch.

The following is a comparison of the price of a school lunch with other lunches.

School Lunch 65¢

Chicken & Noodles  
Whole Kernel Corn  
Homemade Bread & Butter  
Tossed Salad  
Strawberry Shortcake  
White milk  
Calories 709

Packed Lunch \$1.10

Peanut Butter & Jelly Sandwich 17¢  
Potato Chips 25¢  
Chocolate Pudding, canned 23¢  
Twinkie 20¢  
Candy Bar 25¢

Calories 1033

MacDonald's \$1.35 plus tax

Regular Hamburger 45¢  
French Fries 45¢  
Coke, small 45¢  
Calories 520

PARENT PROGRAM  
Letter 6

FOOD HABITS OF CHILDREN

Children will always like or dislike certain foods. They go through stages in which they are finicky about eating. Parents should not be alarmed or over-react to these times by scolding, bribing or forcing a child to eat. This may cause the child to dislike a food so much that he will never taste it.

Food habits which contribute to the lack of nutrients in the diet of a child include:

1. Poor eating practices of the parents.
2. Poor breakfast or none at all.
3. Poor lunch often omitting fruits and vegetables.
4. Snacks of candy, cake and potato chips are high in calories and low in nutrients.
5. Overuse of milk.
6. Self-imposed dieting.
7. No sit-down family meals.

Children of elementary age think food is a self-reward and lunch time in school is the reward for having spent a morning in class. Children eating together can influence a child to select his food more wisely. The way other children accept a food many times will change the child's attitude toward eating new foods. The purpose of the school lunch is not only to provide a balanced lunch but to teach children to eat a wide variety of foods. It is the food which is eaten that builds and maintains the health of the child.

## INVOLVING THE SCHOOL FOOD SERVICE



The school food service program has an obligation to provide students with a suitable eating place and the food needed during a school day for physical, emotional and intellectual development. It should also give students an opportunity to achieve important learnings in nutrition, health, citizenship, and social living. A nutrition education program should help students establish life-long food habits and acquire information which may influence their lives and increase their understanding of the relationship between man and his environment. It is also a function and obligation of the school food service to be a source of information to the student, school and community. The school lunchroom can be a living laboratory where the student can practice desirable food and health habits. The learning in the school lunchroom should be correlated with classroom instruction.

The National School Lunch Program provides nutritional lunches for many children in the United States. Research is available which indicates the importance and relevance of the school lunch program to nutrition education. Nutrition education should be a cooperative program with food service personnel, school administrators, teachers, students, and parents involved. Teachers and school lunch

personnel should work together and identify a wide variety of opportunities to utilize the school food service program as a useful teaching tool. An effective nutrition education program could result in increased participation in the school lunch program and overall better selection of foods at lunch. Better food habits could reduce the plate waste in the school lunch.

The school food service may be used as a teaching tool because it is: 1) a source of information in several content areas; 2) a practical example of nutrition concepts applied to real situations; and 3) a source of nutrition problem-solving activities. When utilized in this way, the school food service becomes a reinforcer of classroom learning.

It is important to provide children with many experiences to learn about food and nutrition during the early years when their attitudes about food are being formed. In the preschool and the primary grades (kindergarten through grade three) the child should:

1. Develop positive attitudes toward food and eating.
2. Learn to accept a wide variety of foods.
3. Be able to recognize some differences in how and what people eat.
4. Begin to understand the relationship of food to health and growth.

A student in the intermediate grades (four through six) should

1. Understand the relationship between food, health, and growth.
2. Understand how to select foods to meet nutritional needs.
3. Develop an appreciation of food.



A middle school student should be able to:

1. Apply knowledge of nutrition to everyday situations.
2. Realize that individual differences exist in requirements and use of food.
3. Evaluate their own food practices.

In senior high school the students should be encouraged to:

1. Understand that their eating habits affect long-range health status and the health of the next generation.

When the school food service becomes an integral part of the school, it may help to motivate and provide practical applications for numerous areas of learning in the curriculum. Health classes can use the school lunch to illustrate the health value of nutritionally balanced meals and the effect of food on growth and development. Health practices related to adequate diet and to sanitation in food handling can be effectively taught by relating them to the lunchroom.

Science classes can study the chemistry of foods and food preservation techniques. The chemistry of cleansing agents, the physiological functions of the general kinds of nutrients, the history of vitamin research, the origin of food fads and superstition, and the control of microscopic and insect life can also be studied.

Social science classes may do research in the geographic sources of food, their effect and value on various areas of the economy, foods used by other countries, commercial food processing, packaging and distribution, government grading and inspection services. They may look at cafeteria practices, the eating habits of students, and their opinion about food and diet.

Mathematics and business education students have an unusual opportunity to carry on real-life activities connected with the cafeteria. They may receive valuable training through furnishing secretarial and bookkeeping services. In studying consumer problems students may learn much regarding the selection of food products for low cost menus, seasonal changes in food prices, quantity buying, ways of checking quality and weight of goods, checking invoices, and the establishment of cooperative relationships with merchants.

Home economics students may carry on many activities related to their area and school food service. Art classes can make charts, posters, displays and table decorations. Students interested in agriculture or biology may grow vegetables for the cafeteria.

ACTIVITIES FOR  
STUDENTS, TEACHERS AND  
FOOD SERVICE PERSONNEL



1. Organize tasting sessions of new foods or new forms of food.
2. Explain the work of a food service employee; i.e., in food handling and sanitation.
3. Discuss student's food likes and dislikes, new foods and unaccustomed foods may be explored.
4. Nutrition information from class work may be used by students to plan menus for the school lunch.
5. Students can apply what they learn about the effects and techniques of advertising to "sell" the school lunch programs to students.
6. Visits to the school food service facility and observation of programs will help students to see meal planning and food handling in practice.
7. Plan menus around holidays and special occasions. Name menu items after school events such as a big football game or a current school play.
8. Decorate the cafeteria with flowers, murals, nutrition posters, pictures or seasonal decorations.
9. Set up a student advisory board or nutrition council. Have students help plan foods for lunch within the meal requirements. Use some of these suggestions on a regular basis.
10. Have a taste panel of students for both old and new recipes.
11. Let students conduct a survey on food preferences.
12. Have students select music to be played during lunch time.
13. Provide a suggestion box in the cafeteria to receive complaints and ideas of the students.

14. Conduct participation contests and reward the class having highest participation.
15. Name a week of menus after the particular class planning them.
16. Plan for special visitors at lunch, i.e., grandparents, parents.
17. Plan special days for students studying other sections of our country or a foreign country (a lunch from Hawaii or Mexico).



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## CHOOSING TEACHING MATERIALS



2

*What materials do I want to use in my classroom today?*

*Do these materials meet the needs of my students?*

*Can I afford these materials?*

These are questions which we all ask as we select materials for use in the classroom. As we would set about to look for materials to use in teaching nutrition, we would find that there is much available. As the teacher, it is our role to decide which materials are best in the given situation. Some important considerations when selecting commercial teaching materials include looking at the content, the timeliness of the subject matter, method of presentation, can the material be easily stored, cost, and does the material promote student growth and development? A suggested checklist for evaluating commercial materials is found on page 374. In using this checklist you should not expect a positive response on every item, but rather you would need to decide on the importance of individual items related to the intended use of the material. This checklist could help you identify the absence or presence of desirable features in materials you are considering for classroom use.

# SUGGESTED CHECKLIST FOR HELPING TEACHERS

## EVALUATE COMMERCIAL MATERIALS



|                     |       |
|---------------------|-------|
| _____               | _____ |
| Name of Publication | Date  |
| _____               | _____ |
| Company             | Cost  |

The purpose of this checklist is not to give a numerical rating to educational materials, but to set up a means by which one can check the presence or absence of desirable features.

Suggested key:   + yes  
                       ? somewhat questionable  
                       0 no

### I. Content

- \_\_\_\_\_ Subject matter scientifically accurate
- \_\_\_\_\_ Free from half-truths and exaggerated statements
- \_\_\_\_\_ Backed by laboratory tests
- \_\_\_\_\_ Backed by recognized reference
- \_\_\_\_\_ Backed by signature of author and professional title
- \_\_\_\_\_ Backed by name and mailing address of firm which publishes it

### II. Timeliness of subject matter

- \_\_\_\_\_ Furnishes the most recent information
- \_\_\_\_\_ Gives recent date of publication
- \_\_\_\_\_ Meets the needs of the time
- \_\_\_\_\_ Adds information to that available in most textbooks

### III. Method of Presentation

- \_\_\_\_\_ Factual, not cluttered with irrelevant material
- \_\_\_\_\_ Well organized
- \_\_\_\_\_ Simple, clear, brief
- \_\_\_\_\_ Attractive in format
- \_\_\_\_\_ Durable
- \_\_\_\_\_ Graphic, well-constructed
- \_\_\_\_\_ Easy to read, sight-saving
- \_\_\_\_\_ Appropriate for group for which it was intended
- \_\_\_\_\_ Interesting style of presentation
- \_\_\_\_\_ Positive in approach

- IV. Subject matter unbiased
- ☐ Clear-cut educational purpose
  - ☐ Information about products is general rather than promotion of specific brands
  - ☐ Text free from advertising
  - ☐ Posters and charts free from advertising
- V. Storage
- ☐ Size that can be stored easily in a classroom
  - ☐ Material that will wear well
- VI. Cost
- ☐ Reasonable for type and quality of material
  - ☐ Will fit into budget
- VII. Development of student growth
- ☐ Helps to develop judgment and discrimination
  - ☐ Helps to develop initiative, self-direction, and resourcefulness
  - ☐ Emphasizes standards consistent with individual and family well-being

Comments:

## GAMING AS A TEACHING TECHNIQUE



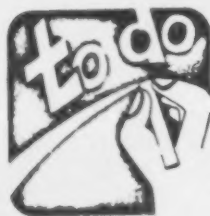
Can we play games in the classroom and still have learning? Of course we can, since playing games is essentially a simplified slice of reality. Use of the gaming technique in the classroom helps to create a real world process that the teacher would like to have the students investigate. When playing games students are able to develop feelings of effectiveness and control, because their actions in the game will produce results. Games can be used to introduce concepts, teach facts, review material covered and to evaluate. It is not being suggested that games be used all the time to teach all things, but as a teacher you can find them effective in altering attitudes and teaching processes. (Gordon)

A couple of points which one might remember when planning for games are included. First, since games often simulate real life situations, we must keep in mind as the second point that most games should not be serious competition. However, some competition is good as it can stimulate, motivate, and challenge a student, therefore winning should be a relative thing, not the most important. The means that the players employ in attempting to win are far more important than winning.

There are a number of types of games available for use in the classroom. Some examples are board games, card games, puzzles, role-playing, simulations or a combination of these. There are

commercial games available or you can make your own. Included in this packet are some nutrition related examples of games which you could use in your classroom.

There are a number of benefits that can be derived from using games in the classroom. First, they provide students and teacher with a change of pace. A second benefit is that games generally stress active learning. Third, games often provide immediate feedback; right, wrong, try again, etc. A fourth point is that although games are generally quite inexpensive, they are capable to developing high motivation, relevant theory to practical applications and can provide low cost simulation games which permit practice in theory application without actual cash or human investment, i.e., planning meals using the basic four, doing grocery shopping using empty boxes, etc. Finally, games are easy to use. The students are often already familiar with the rules.



To help you develop your own game, an outline of suggested procedures for planning, designing, and administering games, follows. (Maidment)



- I. Elect a game approach
  - A. Consider course objectives
  - B. Determine student needs
  - C. Review logistics
  - D. Select game type
- II. Prepare game objectives
  - A. Select game subject
  - B. Determine game scope
  - C. Differentiate game objectives
  - D. Write specific objectives



- III. Collect game data
  - A. Determine needed data
  - B. Identify data sources
  - C. Organize data
  - D. Search for applicable models
- IV. Design a game model
  - A. Identify actors
  - B. Identify actor goals
  - C. Identify actor resources
  - D. Identify actor interactions
- V. Develop game materials
  - A. Write scenario
  - B. Refine roles
  - C. Prepare game rules
  - D. Plan supplementary materials
- VI. Execute the game
  - A. Check logistics
  - B. Review materials
  - C. Orient players
  - D. Play the game
- VII. Evaluate the game
  - A. Provide post-game analysis
  - B. Review tapes
  - C. Test game objectives
  - D. Redesign the game



④

Whether you develop a game yourself or use a commercially made game, you will want to evaluate each game as to its worth in your classroom. A rather extensive instrument for evaluation of educational games is included in this section. As you evaluate a game, remember that any one game cannot be expected to do all of these things. You have to decide which ones are most important for your own teaching situation.

# INSTRUMENT FOR THE EVALUATION OF EDUCATIONAL GAMES

Name of Game \_\_\_\_\_

Publisher \_\_\_\_\_ Suggested Number of Players \_\_\_\_\_  
 Publication Date \_\_\_\_\_ Reading Level Required to Read Rules \_\_\_\_\_  
 Cost \_\_\_\_\_ Reading Level Required to Play Game \_\_\_\_\_

Educational Possibilities (One game cannot be expected to do all things)

|                                                                                                            | No | Some-<br>what | Yes |
|------------------------------------------------------------------------------------------------------------|----|---------------|-----|
| 1. Is the information accurate?                                                                            |    |               |     |
| 2. Objectives:                                                                                             |    |               |     |
| A. Are teaching objectives clear?                                                                          |    |               |     |
| B. Are teaching objectives relevant to targeted student group?                                             |    |               |     |
| 3. Is game based on real-life situations and decisions?                                                    |    |               |     |
| 4. Does winning require knowledge rather than luck?                                                        |    |               |     |
| 5. Does the game improve attitudes toward learning?                                                        |    |               |     |
| 6. Does the game require high levels of cognitive behavior?                                                |    |               |     |
| 7. Time:                                                                                                   |    |               |     |
| A. Is the time required to play the game reasonable in terms of normal classroom periods (40-50 minutes) ? |    |               |     |
| B. Can the game be adapted to different time limits easily?                                                |    |               |     |
| C. Does the amount of learning justify the time spent in preparing students to play the game?              |    |               |     |
| D. Does the amount of learning justify the time spent in playing the game?                                 |    |               |     |

Instrument to Evaluate Games, Cont.

| <u>Educational Possibilities</u>                                                                                                     | No | Some-<br>what | Yes |
|--------------------------------------------------------------------------------------------------------------------------------------|----|---------------|-----|
| 8. Flexibility                                                                                                                       |    |               |     |
| A. Can the game be adapted to appeal to different age groups and retain its educational value?                                       |    |               |     |
| B. Can the game content be changed to meet the needs of different ability levels within age groups and retain its educational value? |    |               |     |
| 9. Does the game teach or test, i.e., can the game be played without background learning?                                            |    |               |     |
| 10. Mathematical Calculations<br>Is the game constructed so as to eliminate the need for mathematical calculations?                  |    |               |     |
| <u>Student Interest</u>                                                                                                              |    |               |     |
| 1. Is the game aesthetically appealing? (colors, artwork, etc.)                                                                      |    |               |     |
| 2. Does it appear that students will remain actively involved and motivated without prodding or encouragement by instructor?         |    |               |     |
| 3. Is the game constructed so competition does not interfere with learning?                                                          |    |               |     |
| 4. Number of players:                                                                                                                |    |               |     |
| A. Can the game be played both by individuals and teams?                                                                             |    |               |     |
| B. Can all participate actively?                                                                                                     |    |               |     |
| C. Can it be played by only one? (solitaire version)                                                                                 |    |               |     |
| D. Can the game be played without teacher supervision?                                                                               |    |               |     |

Instrument to Evaluate Games, Cont.

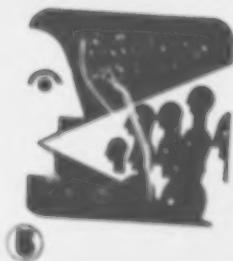
| <u>Student Interest</u>                                                                                                                                                                                                                                               | No | Some-<br>what | Yes |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|---------------|-----|
| 5. Rules and Directions:                                                                                                                                                                                                                                              |    |               |     |
| A. Are the rules and directions concise?                                                                                                                                                                                                                              |    |               |     |
| B. Are the rules and directions fully explanatory of the game?                                                                                                                                                                                                        |    |               |     |
| C. Are the rules and directions easily understood?                                                                                                                                                                                                                    |    |               |     |
| D. Are suggestions made to the teacher for summarizing the content learned in the game?                                                                                                                                                                               |    |               |     |
| <u>Physical Characteristics</u>                                                                                                                                                                                                                                       |    |               |     |
| 1. Is the game easy to store? Is it self-contained? Can it fit into file cabinets, drawers, shelves, or other areas accessible to the classroom teacher?                                                                                                              |    |               |     |
| 2. Use and Durability:                                                                                                                                                                                                                                                |    |               |     |
| A. Will parts of the game last over a period of time? (Are game parts made of durable materials? Will the effect of heat, cold, and humidity be negligible upon the materials and the usability of the game?)                                                         |    |               |     |
| B. In use, do the parts function well?                                                                                                                                                                                                                                |    |               |     |
| 3. Physically Handicapped (Blind, spastic, deaf, paraplegic):                                                                                                                                                                                                         |    |               |     |
| A. Could a physically handicapped person play the game? (i.e., taking into account that another student could spin a spinner, throw and/or read dice, move tokens, etc. for the handicapped person if necessary, would the game then be playable to the handicapped?) |    |               |     |
| B. If answer to 3A was "No," could the game be modified for the physically handicapped? (Ex., cards, paper money, etc. can easily be adapted for blind students by using a stylus.)                                                                                   |    |               |     |

Instrument to Evaluate Games, Cont.

| <u>Physical Characteristics</u>                                                                                                                   | No | Some-<br>what | Yes |
|---------------------------------------------------------------------------------------------------------------------------------------------------|----|---------------|-----|
| C. Could a physically handicapped person play the solitaire version of the game, if any? (Taking into account the modifications suggested in 3B.) |    |               |     |
| 4. Consumable materials:                                                                                                                          |    |               |     |
| A. Are consumable materials inexpensively replaced?                                                                                               |    |               |     |
| B. Approximate replacement cost of consumable materials. _____                                                                                    |    |               |     |
| C. Are playing pieces likely to disappear?                                                                                                        |    |               |     |
| 5. Extra Equipment:                                                                                                                               |    |               |     |
| A. Is the game constructed so as to eliminate the need for extra equipment such as overhead projectors, filmstrip machine, etc.?                  |    |               |     |
| B. If equipment is necessary, what kinds?<br>_____                                                                                                |    |               |     |

Instrument was developed by Marsha Gwen Blucker, Graduate Assistant, Innovative Teaching Techniques Project, Home Economics Education, University of Illinois, 1973.





Try the gaming technique with your students. Use a game that you have made with your students or use some of the gaming ideas suggested on the next four pages. At the end of the games is a list of some commercial nutrition related games available. Please note that this is only a partial list.

### NUTRITION SCRABBLE

**PURPOSE:** The use of this game would allow the student to think of and recognize many nutrition related terms. This game would also help the student to improve his/her spelling of these terms.

**NUMBER OF PLAYERS:** 2-4

**AGE LEVEL:** Junior or Senior High

**DIRECTIONS:** Follow the directions and rules of the commercial scrabble game, except all words made must be related to nutrition. Any player may challenge any word made. The maker of the word would have to defend the word with an explanation of how the word relates to nutrition. Dictionaries may only be used to check spelling or definitions of words.

Play until all letters are used or until time has expired. The player with the most points would be a winner.

Try to keep the game moving as fast as possible, but chat with the group about the words that have been made.

**VARIATIONS:** The directions may be varied by making them more specific, for example: play only for words related to the nutrients, basic four, fruits, or vegetables, etc.

## BASIC FOUR RUMMY

### Rules of the Game

1. The game is designed for 4 to 6 players.
2. The object of the game is to obtain the most number of points by completing suitable meals which meet the basic our guidelines.
3. Completing a food group is worth 5 points and the player to complete their meal first gets 10 bonus points.
4. To complete a game three hands are played, one for each meal. The hands should be played in the sequence of breakfast, lunch, and dinner.
5. In breakfast the dealer deals four cards and for lunch and dinner the dealer deals five cards to each player.

### Playing the Game

1. Shuffle the cards and deal the correct number of cards needed to make the meal. Remember to start with breakfast.
2. Place the remaining cards in the center of the table with the top card face up.
3. The player to the right of the dealer may either take the top card or draw one from the deck. After taking a card, the player then discards an unwanted card from his hand. The play then continues on around the table.
4. When a player has drawn a card and can complete the meal, he places the meal down on the table and discards the extra card. The winning player must have suitable foods for each meal. (Not ice cream for milk in breakfast meal).

### Scoring

1. The winner would get 5 points for each food group plus the 10 points for being the first to complete his/her hand. In totaling points, the other player will count each food group only once. (Example: 2 milks would only score 5 points for that group). A score sheet is provided.
2. After playing 3 hands, the players will total the points for the game. The player with the most points will win the game.

### Making Playing Cards

1. To make the card game you need:

15 cards from the fruit and vegetable group  
(3 vitamin C, 6 fruits, 6 vegetables)

15 cards from the grains group

8 cards from the meat group

13 cards from the milk group

5 cards with undesirable food items (candy, pop, potato chips)

2. Pictures could be mounted on a light-weight tagboard and then covered with clear Contact paper or laminated for durability.

### Variations

The students and/or teacher may vary the rules according to individual or class needs.

# SCORE CARD

for

Basic Four Rummy

Directions: As you complete each hand, record the number of points you scored.

|                                         | Points |
|-----------------------------------------|--------|
| BREAKFAST:                              |        |
| 1 fruit and vegetable group (Vitamin C) | _____  |
| 1 grains group                          | _____  |
| 1 milk group                            | _____  |
| LUNCH:                                  |        |
| 1 meat group                            | _____  |
| 1 fruit and vegetable group             | _____  |
| 2 grains group                          | _____  |
| 1 milk group                            | _____  |
| DINNER:                                 |        |
| 1 meat group                            | _____  |
| 2 fruits and vegetables group           | _____  |
| 1 grains group                          | _____  |
| 1 milk group                            | _____  |
| Totals for Day                          | _____  |
| Bonus Points for Winning Breakfast Hand | _____  |
| Bonus Points for Winning Lunch Hand     | _____  |
| Bonus Points for Winning Dinner Hand    | _____  |
| Total Points for Game                   | _____  |



PARTIAL LISTING OF GAMES  
FOR USE IN TEACHING NUTRITION

"Chomp, Chomp." The object of the game is to be the first to reach the dinner table. The game board is lively and colorful and all of the pieces necessary for playing are included. Part of the game involves the use of the Basic Four Food Groups. (Grades 2-12) (Cost: 99¢)

Address: Pantry Pride Supermarket Division  
Consumer Affairs Department  
3175 John F. Kennedy Boulevard  
Philadelphia, Pennsylvania 19101

"Food Crossword Puzzles" (#2563). Various crossword puzzles related to foods. (No price available)

Address: Ideal School Supply Co.  
Oak Lawn, Illinois 60453

"Good Food News for Kids." Games and puzzles to teach children about food. (\* pages, 1 copy free)

Address: Consumer Information Center  
Pueblo, Colorado 81009

"The Calorie Game." The game is designed to make nutrition and consumer education more effective and enjoyable. The object of the game is to obtain 100 percent of the Recommended Dietary Allowances for eight nutrients before running out of calories. (Cost: Approximately \$15)

Address: Graphics Company  
P. O. Box 331  
Urbana, Illinois 61801

"The 4 Food Groups for Better Meals." Played similar to bingo. Players learn the four food groups, 1974. (Approximate cost: \$3.95) No. 0051271

Address: Superintendent of Documents  
U.S. Printing Office  
Washington, D. C. 20402

"The Nutrient Game." Designed as an effective tool for helping to teach nutrition education and serves to make learning fun. The idea of the game is to land on all of the nutrients before getting to the end. (Free)

Address: The Sugar Association, Inc.  
Publications Department  
1511 K Street, N. W.  
Washington, D. C. 20005

"The Nutrition Game." This game teaches principles of nutrition while players are involved in making food choices. (Cost: Approximately \$15.)

Address: Graphics Company  
P. O. Box 331  
Urbana, Illinois

"Vitamins." A game which helps to teach the various concepts related to vitamins. (No price available)

Address: The Lawhead Press, Inc.  
900 E. State Street  
Athens, Ohio



Gordon, A. K. *Games for Growth*. Palo Alto, California: Science Research Associates, 1970.

Maidment, R. *Stimulation Games, Design and Implementation*. Columbus, Ohio: Charles E. Merrill Publishing Company, 1973.

## STUDENT ACTIVITIES



Although food preparation in the classroom is being limited due to health and safety reasons, it is still one of the favorite activities of students, regardless of the age level. Food preparation can range from some simple snacks to a full meal. Food preparation can allow all students to be actively involved with the classroom activities. Instruction involving the preparation of foods can help students determine the nutrients found in individual foods as well as what should be included in a well-balanced meal. The calories might be calculated for each snack.

The activities suggested in this section can be set up as a series of learning centers to be completed at one time, or the activities may be done one at a time over a period of time. They can be done in conjunction with classroom instruction, i.e., cheese cubes while studying milk, or the state of Wisconsin or Switzerland, or make metric munchies using metric equipment when studying the metric system in math or science. Regardless of when or how the food preparation is done, care should be taken to make sure the result of this activity is learning about foods and nutrition.

## Learning Center Activity

### Metric Munchies (Rice Krispies Treats)

#### Needed Equipment and Ingredients:

1 electric skillet  
1 wooden spoon  
1 rubber spatula  
1 metal pan  
1 table knife  
waxed paper  
paper towels

50 ml. margarine (1/4 cup)  
50 ml. peanut butter (1/4 cup)  
240 g. miniature marshmallows (4 cups)  
150 g. rice krispies (5 cups)

Appropriate measuring equipment and/or scales

#### Directions:

1. Melt the 50 ml. of margarine over low heat (220 on skillet thermostat)
2. Add the 240 g miniature marshmallows and 50 ml. peanut butter to melted margarine. Stir until melted.
3. Turn off heat and stir in the 150 g of rice krispies.
4. Butter the pan with the wrapper from the margarine. (This can be done while the margarine is melting.)
5. Spread the rice krispies into the buttered pan. Press down, using a piece of waxed paper and your hands.
6. Cool and cut into squares. Serve.

List the nutrients found in the snack your group prepared:

(This may be found on the container or the teacher will provide a book in which to find this information.)

| Nutrients | Amount |
|-----------|--------|
|           |        |



## Learning Center Activity

### Cheese Fondue

#### Needed Equipment and Ingredients:

- 1 fondue pot with forks or toothpicks
- 1 wooden spoon
- 1 can opener
- 1 cutting board or waxed paper for table top
- 2-3 table knives
- 1 bowl for bread cubes
  
- 1 can cheddar cheese soup
- 6-8 slices French or white bread
- toothpicks
- napkins/paper towels

#### Directions:

1. Open soup and pour into fondue pot.
2. Heat until cheese soup softens and becomes ready for dipping. It will be necessary to stir the cheese occasionally during heating.
3. While cheese is heating, cut the bread into 1 inch cubes and place in a large bowl.
4. When cheese is ready, dip bread cubes into it moving across the bottom of the fondue pot using a figure 8 motion. (This allows you to pick up a sufficient amount of cheese.)

List the nutrients found in the snack your group prepared:  
(This may be found on the container or the teacher will provide a book in which to find this information.)

| Nutrients | Amount |
|-----------|--------|
|           |        |

### Vegetable Nibblers

3-4 table knives  
1 large bowl with water for cleaning vegetables  
paper towels  
large plate  
vegetables - use any that can be eaten raw, but be sure to try  
some different ones.  
napkins

1. Wash vegetables and drain on paper towels.
2. Cut into bit size serving pieces.
3. Arrange on large plate.

[illegible]

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## Peanut Butter and Friends

4-5 table knives  
1 large plate  
1 jar peanut butter  
1 banana  
1 apple  
1 stalk of celery  
crackers  
raisins

**Directions:**

1. Slice fruits into bite-size pieces and spread with peanut butter. Can be decorated with raisins.
2. Cut stalk of celery into 1 inch pieces. Spread with peanut butter.
3. Spread crackers with peanut butter.
4. Arrange all of the foods on the large plate and serve.

## Nutrients

Amount

### Tossed Salad

- 1 large bowl for mixing
- 1 large bowl for cleaning
- 2 forks for tossing
- 2 cutting boards
- 2 paring knives
- 1 head lettuce (Try different types of salad greens, like spinach)
- 3 ribs celery
- 3 carrots
- 1 small package radishes
- 1 package cherry tomatoes
- 1 bottle dressing
- paper towels
- small paper plates

1. Clean all vegetables before beginning.
2. Break lettuce into mixing bowl.
3. Cut up celery, carrots, and radishes into bite-size pieces.
4. Mix cut vegetables and tomatoes in lettuce and toss with 2 forks.
5. Serve with salad dressing.

## Nutrients

Amount

## Tropical Fruit Cooler

- 2 medium bananas
- 3 cups pineapple juice (unsweetened)
- 8 large ice cubes
- 2 table knives
- 1 long handled wooden spoon
- 1 large pitcher
- 12 paper cups (5 oz. size)
- paper towels
- can opener
- blender

1. Cut bananas into 4 or 5 pieces. Put into blender jar.
2. Add pineapple juice and ice cubes into blender jar.
3. Cover and blend at crush speed for about 15 seconds.
4. Pour into glasses and serve immediately.
5. Makes 12 servings.

List the nutrients found in the snack your group prepared:  
(This may be found on the container or the teacher will provide you with a book in which to find this information).

| Nutrients | Amount |
|-----------|--------|
|           |        |



**evaluation  
of nutrition  
information**



## EVALUATION OF A NUTRITION ARTICLE



and



As we work with the area of nutrition, we become cognizant of the fact that much is written related to this topic. As lay people teaching students nutrition concepts, we need to be able to read and discern the information found in such articles. In order to better do this, we need to become aware of the ways in which nutrition information is presented to the reading public.

There are four types of periodicals in which you would find nutritional information; scientific, research, educational and popular. A description of each with some examples follows.

- A. Scientific--Periodicals in this group for the most part, are reports of scientific research, but may be quite general in nature. They are for those who are searching for answers and want to be better informed. Scientific articles are based on research, but may not include the actual data. Some examples are:\*

*American Journal of Clinical Nutrition*  
*Journal of American Dietetic Association*  
*Journal of American Medical Association*  
*Journal of Nutrition*  
*Nutrition Reviews*

\*There is often an over-lapping of the types of articles, as scientific articles may be found in the periodicals listed as research or research articles may be found in the periodicals listed as scientific.

- B. Research--Periodicals in this group are based on a research study. The general format of such an article is to present the problem being researched, describe the procedure, report the findings and present the implications of the research. Some examples are:\*

*Federation Proceedings*  
*Home Economics Research Journal*  
*Journal of American Nursing Association*  
*Science*

- C. Educational--Sources in this group provide information which is quite general in nature. The information, while accurate, will not necessarily be scientific in nature. However, articles written in these periodicals may be the results of research but are written for educators. These articles may be about school lunch programs or the lack of them; or the need for proper nutrition; or how to teach nutrition in your area and/or grade level. Some examples are:

*American School and University*  
*Family*  
*Journal of Home Economics*  
*Journal of Nutrition Education*  
*Learning Instructor*  
*Nations Schools*  
*Nutrition News/Dairy Council Digest*  
*Nutrition Today*  
*PTA Magazine*  
*Other educational journals (state and national)*

- D. Popular--Sources in this group present information for the lay person who may want information but who is not able to interpret research findings. The one thing one needs to be aware of as she/he reads these articles is the author. Only as one recognizes the writer as an authority can this source be considered authentic and reliable. A degree, Ph.D. or M.D. after the name does not necessarily imply a knowledge of nutrition. Some examples are:

|                            |                                |
|----------------------------|--------------------------------|
| <i>Changing Times</i>      | <i>Reader's Digest</i>         |
| <i>Consumer Reports</i>    | <i>Redbook</i>                 |
| <i>Family Circle</i>       | <i>Woman's Day</i>             |
| <i>Ladies Home Journal</i> | <i>Other popular magazines</i> |
| <i>Parents</i>             |                                |

\*There is often an over-lapping of the types of articles, as scientific articles may be found in the periodicals listed as research or research articles may be found in the periodicals listed as scientific.

## EVALUATE A NUTRITION ARTICLE



1. Read a recent (within the last 2 years) article on nutrition.
2. Summarize the article.



Title:

Author:

Periodical:

Date:

### Summary

3. Check the type of article you have just read. Refer to the descriptions and examples of each of the four types of articles to make your decision.

\_\_\_\_ Scientific  
\_\_\_\_ Research  
\_\_\_\_ Educational  
\_\_\_\_ Popular

4. To further evaluate the article you have read, consider the following points by circling your response and making comments to support your response to each question.

YES NO Does the author have acceptable credentials in the field of nutrition?

Comments:

YES NO Are the sources of the information reliable? (This is especially important if the author is someone other than a nutritionist.)

Comments:

YES NO Does the information agree with other reliable sources of information?

Comments:

YES NO Can you use this information personally and/or in your teaching?

Comments:



Adapted from Listing

Dept. of Nutrition  
Harvard University  
January, 1976

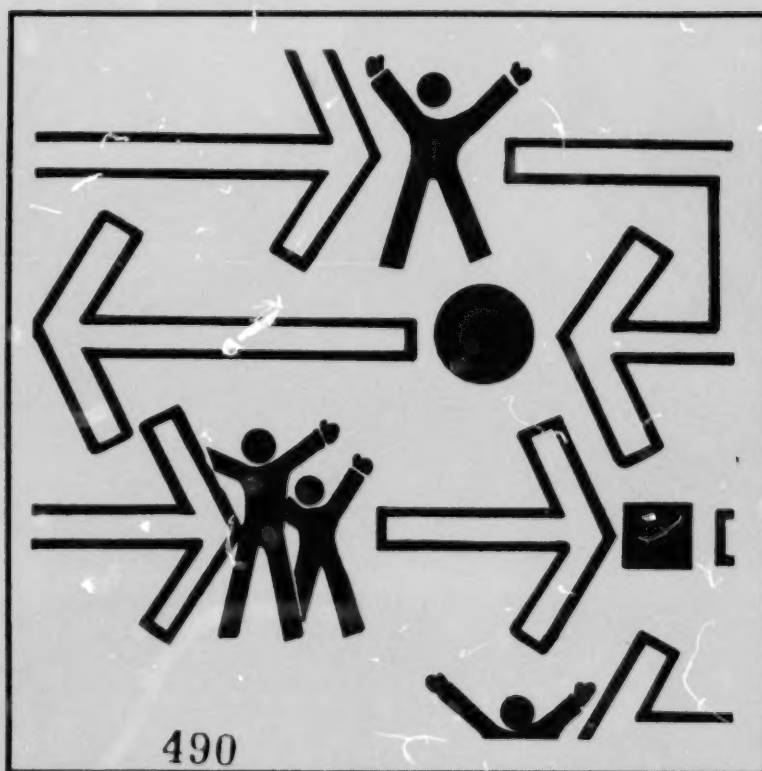
BOOKS NOT RECOMMENDED

- Abehsera: COOKING FOR LIFE, Avon, 1972.  
Abehsera: ZEN MACROBIOTIC COOKING, Avon, 1970.  
Atkins: DR. ATKIN'S DIET REVOLUTION, McKay, 1972.  
Alexander: GOOD HEALTH AND COMMON SENSE, Crown, 1972.  
Bailey: VITAMIN E, YOUR KEY TO A HEALTHY HEART, ARC Books, Inc., 1971.  
Bieler: FOOD IS YOUR BEST MEDICINE, Random House, 1965.  
Cameron: THE DRINKING MAN'S DIET COOKBOOK, Bantam, 1969.  
Cheraskin and Ringsdorf: NEW HOPE FOR INCURABLE DISEASES, Exposition Press, 1971.  
Clark: STAY YOUNGER LONGER, Devin-Adair, 1961.  
David, Adelle: (Any book)  
Donaldson: STRONG MEDICINE, Doubleday, 1961.  
Ellis: THE DOCTOR WHO LOOKED AT HANDS, Vantage Press, 1966.  
Elwood: FEEL LIKE A MILLION, Pocketbooks, Inc., 1965.  
Feingold, B.: WHY YOUR CHILD IS HYPERACTIVE, Random House, 1975.  
Fredericks, Carleton: (Any book).  
Glass: LIVE TO BE 180, Taplinger, 1962.  
Hauser, Gayelord: (Any book).  
Hunter, Beatrice Trum: (Any book).  
Jacobsen, M.: (Any book).  
Jameson and Williams: THE DRINKING MAN'S DIET, Cameron, 1964.  
Jarvis: FOLK MEDICINE: A VERMONT DOCTOR'S GUIDE TO GOOD HEALTH, Holt, 1958.  
Jarvis: ARTHRITIS AND FOLK MEDICINE, Fawcett, 1962.  
Keller: HEALING WITH WATER, Award Books, 1968.  
Kirschner: LIVE FOOD JUICES, Kirschner, 1960.  
Kloss: BACK TO EDEN, Lancer, 1971.  
Kordel: EAT AND GROW YOUNGER, McFadden, 1962.  
LAPPE: DIET FOR A SMALL PLANET, Friends of the Earth/Ballantine, 1971.  
Lindlahr: CALORIE COUNTDOWN, Prentice-Hall, 1962.  
Longgood: THE POISONS IN YOUR FOOD, Simon and Schuster, 1960.  
Mackarness: EAT FAT AND GROW SLIM, Pocketbooks, Inc, 1962.  
Marsh: HOW TO BE HEALTHY WITH NATURAL FOODS, ARC Books, Inc., 1969.  
Martin: LOW-BLOOD SUGAR: THE HIDDEN MENACE OF HYPOGLYCEMIA, ARC Books, Inc., 1970.  
Nittler: A NEW BREED OF DOCTOR, Pyramid House, 1972.  
Null, Gary: (Any book)  
Nyoti: YOU ARE ALL SANPAKU, University Books, Inc., 1965.  
Ohsawa: ZEN MACROBIOTICS--THE ART OF LONGEVITY AND REJUVENATION, Ignoramus Press, 1966.  
Read, Ilstrup and Gammon: EDGAR CAYCE ON DIET AND HEALTH, Hawthorn, 1969.  
Rodale Press: (Any book or Prevention Magazine)

Books Not Recommended

Rose: FAITH LOVE AND SEAWEEED, Prentice-Hall, 1963.  
Rosenburg: EAT YOUR WAY TO BETTER HEALTH, Bobbs-Merrill, 1961.  
Shute and Taub: VITAMIN E FOR AILING AND HEALTHY HEARTS, Pyramid House, 1969.  
Stillman and Baker: DOCTOR'S QUICK WEIGHT LOSS DIET, Dell, 1968.  
Stillman and Baker: DOCTOR'S INCHES OFF DIET, Dell, 1970.  
Stillman and Baker: THE DOCTOR'S QUICK TEENAGE DIET, Paperback Library, 1972.  
Twitchell: HERBS: THE MAGIC HEALERS, Lancer, 1971.  
Wade: HELPING YOUR HEALTH WITH ENZYMES, ARC Books, 1966.  
Wade: MAGIC MINERALS, ARC Books, 1971.  
Waldbott: A STRUGGLE WITH TITANS, Carleton, 1965.  
Weiner: GET YOUR HEALTH TOGETHER, Lancer, 1971.  
West, Ruth: (Any book)  
Whitmoyer: YOUR HEALTH IS WHAT YOU MAKE IT, Exposition Press, 1972.  
Winter: BEWARE OF THE FOOD YOU EAT, Signet, 1971.  
Winter: POISONS IN YOUR FOOD. Crown, 1969.

**scope and sequence  
with chart**



## SCOPE AND SEQUENCE



2

On the following five pages you will find a suggested scope and sequence chart for use in your classroom. This was put together using the National Dairy Council Materials for the pre-school and kindergarten and three sets of state adopted health textbooks for grades 1-8.

For the junior high and senior high home economics the appropriate Indiana resource curriculum guide was used. For the high school health, biology and science, the current state adopted textbooks were used. It is the intent of this chart to help you as the teacher to see what nutrition related topics are currently being covered at the various levels in the textbooks you are using. To coordinate programs in your school, it would be advantageous to check with other teachers to see what is being taught in nutrition. Please note that this is not any recommendation of topics to be taught, but is only a report of what is currently being covered in the area of nutrition in your textbooks.

The numbers given after each topic is keyed to the textbook from which the topic was taken. The Reference Key for the Scope and Sequence Chart is found on page 419-420.

# SUGGESTED SCOPE AND SEQUENCE CHART

## Nutrition Related Topics

| Grade                      | Basic Four                                                                                                                                                  | Nutrients                                                                                                                                                                                                                             | Dental Health                                                                                                | Meals & Snacks                                                                                                                                                            | Problems | Misc.                                                                                                              |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------------------------------------------------------------------------------------------------------|
| Preschool and Kindergarten |                                                                                                                                                             | <ul style="list-style-type: none"> <li>-identify ingredients in some foods (1)</li> <li>-classify foods according to plant and animal sources (1)</li> <li>-state relationship between food, energy, growth and health (1)</li> </ul> |                                                                                                              | <ul style="list-style-type: none"> <li>-look at food production, preparation of simple foods (1)</li> <li>-identify variations in amounts of food consumed (1)</li> </ul> |          | <ul style="list-style-type: none"> <li>-look at how food choices reflect family culture and society (1)</li> </ul> |
| First                      |                                                                                                                                                             |                                                                                                                                                                                                                                       | <ul style="list-style-type: none"> <li>-introduction to dental care (2)</li> <li>-dental care (4)</li> </ul> | <ul style="list-style-type: none"> <li>-introduction to meals (Thought Questions) (2)</li> <li>-chapter on breakfast (4)</li> </ul>                                       |          |                                                                                                                    |
| Second                     | <ul style="list-style-type: none"> <li>-introduction to different kinds of foods and balanced meals (2)</li> <li>-introduction to basic four (4)</li> </ul> |                                                                                                                                                                                                                                       | <ul style="list-style-type: none"> <li>-dental care (4)</li> </ul>                                           | <ul style="list-style-type: none"> <li>-when to eat sweets (4)</li> </ul>                                                                                                 |          | <ul style="list-style-type: none"> <li>-coffee and tea (4)</li> </ul>                                              |
|                            |                                                                                                                                                             |                                                                                                                                                                                                                                       |                                                                                                              |                                                                                                                                                                           |          |                                                                                                                    |



| Grade  | Basic Four                                                                                                                                   | Nutrients                                                                                                                        | Dental Health                                                                                             | Meals & Snacks                | Problems                                                                    | Misc.                                                                                                                                    |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-------------------------------|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Third  | -introduction to basic four (2)<br>-introduction to basic four and use of basic four (3)                                                     | -digestion (2)                                                                                                                   | -prevention (2)<br>-tooth growth, formation, and decay (3)                                                | -good snack foods (3)         | -overweight<br>-underweight<br>-tooth decay (2)                             | -functions of food in body (2)<br>-coffee and tea<br>alcohol, tobacco (3)                                                                |
| Fourth | -introduction to basic four and use of basic four (2)<br>-balanced diet/food, choice, variety (3)<br>-function of basic four food record (4) | -mentioned nutrients (2)<br>-digestion<br>-introduction to nutrients (3)                                                         | -caring for teeth and gums<br>-tooth decay and gum disease (2)<br>-brushing/decay (4)<br>-dental care (3) |                               |                                                                             | -alcohol (3)                                                                                                                             |
| Fifth  |                                                                                                                                              | -introduction to nutrients, calories (3)                                                                                         |                                                                                                           | -good and bad snack foods (3) |                                                                             | -alcohol (3)                                                                                                                             |
| Sixth  | -introduction to basic four and use of basic four (2)<br>-introduction to basic four and use (4)                                             | -introduction to nutrients (2)<br>-introduction to nutrients, calories (3)<br>-introduction to nutrients (focus on vitamins) (4) | -prevention and causes (4)                                                                                | -breakfast (4)                | -misconceptions about foods (2)<br>-scurvy, pellagra, beriberi, rickets (4) | -suggestions on preparing foods (2)<br>-weight control<br>-food and skin (3)<br>-saving food values<br>-facts and fallacies, alcohol (4) |
|        |                                                                                                                                              |                                                                                                                                  |                                                                                                           |                               |                                                                             |                                                                                                                                          |

| Grade                                | Basic Four                                                                                                                                                                  | Nutrients                                                                                                                                                | Dental Health                                                                                                                                  | Meals & Snacks                                                                                                 | Problems                                                                                                                                                                                                                                                                                                              | Misc.                                                                                                                                                                      |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Seventh-<br>Health                   | <ul style="list-style-type: none"> <li>-basic four</li> <li>-balanced diet (3)</li> <li>-food choices, variety (4)</li> </ul>                                               | <ul style="list-style-type: none"> <li>-introduction to nutrient digestion (2)</li> </ul>                                                                | <ul style="list-style-type: none"> <li>-tooth decay (4)</li> </ul>                                                                             | <ul style="list-style-type: none"> <li>-breakfast</li> </ul>                                                   | <ul style="list-style-type: none"> <li>-food and population</li> <li>-food and pollution (2)</li> <li>-fad diets</li> <li>-goiter</li> <li>-pellagra</li> <li>-kwashiorkor</li> <li>-weight control (3)</li> <li>-weight gain</li> <li>-weight loss</li> <li>-poor diet (4)</li> </ul>                                | <ul style="list-style-type: none"> <li>-food patterns (ethnic) (U.S. and other countries) (2)</li> <li>-foods around the world (3)</li> <li>-food additives (4)</li> </ul> |
| 413<br>Eighth-Health                 | <ul style="list-style-type: none"> <li>-overview of food groups (2)</li> <li>-introduction to basic four (3)</li> <li>-basic four, food choices and calories (4)</li> </ul> | <ul style="list-style-type: none"> <li>-overview of nutrients (2)</li> <li>-digestion, calories (2)</li> <li>-digestion nutrients--detail (4)</li> </ul> | <ul style="list-style-type: none"> <li>-tooth decay (2)</li> <li>-cavities, plaque, and pain (3)</li> <li>-tooth decay and care (4)</li> </ul> | <ul style="list-style-type: none"> <li>-"junk food"</li> <li>-breakfast (3)</li> <li>-breakfast (4)</li> </ul> | <ul style="list-style-type: none"> <li>-food fads</li> <li>-obesity</li> <li>-kwashiorkor</li> <li>-beriberi</li> <li>-pellagra</li> <li>-rickets</li> <li>-scurvy (2)</li> <li>-overweight</li> <li>-loss of weight</li> <li>-food fads (3)</li> <li>-skin</li> <li>-underweight</li> <li>-overweight (4)</li> </ul> | <ul style="list-style-type: none"> <li>-alcohol (4)</li> </ul>                                                                                                             |
| Seventh-<br>Eighth<br>Home Economics | <ul style="list-style-type: none"> <li>-basic four as guide in meeting physiological needs (5)</li> </ul>                                                                   | <ul style="list-style-type: none"> <li>-physiological factors as related to food intake (5)</li> </ul>                                                   |                                                                                                                                                | <ul style="list-style-type: none"> <li>-food preparation as related to basic four (5)</li> </ul>               | <ul style="list-style-type: none"> <li>-environment as related to food intake (5)</li> </ul>                                                                                                                                                                                                                          | <ul style="list-style-type: none"> <li>-peer influence related to food intake patterns values and attitudes as related to food intake (5)</li> </ul>                       |

| Grade                         | Basic Four                                                                                                                                                                                                                                                | Nutrients                                                                                                                                                                                | Dental Health                                                                                                                                                                                                                           | Meals & Snacks                                                                                                     | Problems                                                                                                                                                                                                                                                                           | Misc.                                                                                                                                                                                                                                                                             |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| High School<br>Home Economics | <ul style="list-style-type: none"> <li>-basic four as guide for meeting nutritional needs of family</li> <li>-pregnancy</li> <li>-illness (6)</li> </ul>                                                                                                  | <ul style="list-style-type: none"> <li>-study of all nutrients to meet physiological needs</li> <li>-functions of nutrients (6)</li> </ul>                                               |                                                                                                                                                                                                                                         | <ul style="list-style-type: none"> <li>-food preparation as related to satisfaction of family needs (6)</li> </ul> | <ul style="list-style-type: none"> <li>-economic factors that influence food choice (6)</li> </ul>                                                                                                                                                                                 | <ul style="list-style-type: none"> <li>-Social and psychological factors influencing likes and dislikes and cultural food patterns (6)</li> </ul>                                                                                                                                 |
| High School<br>Health         | <ul style="list-style-type: none"> <li>-mention basic four and calories (7, 11)</li> <li>-basic four and role in balanced diet (8, 10, 12, 13)</li> <li>-basic four and nutrients they provide</li> <li>-RDA's (9)</li> <li>-food choices (10)</li> </ul> | <ul style="list-style-type: none"> <li>-introduction to nutrients, functions and sources</li> <li>-digestion (7, 8, 9, 10, 11, 12, 13)</li> <li>-deficiency symptoms (12, 13)</li> </ul> | <ul style="list-style-type: none"> <li>-care and problems (7)</li> <li>-decay process</li> <li>-diseases</li> <li>-fluoridation</li> <li>-care (8, 9, 10, 12, 13)</li> <li>-care of teeth and gums</li> <li>-prevention (11)</li> </ul> | <ul style="list-style-type: none"> <li>-importance of each meal</li> <li>-snacks-good and bad (7)</li> </ul>       | <ul style="list-style-type: none"> <li>-tobacco</li> <li>-alcohol</li> <li>-drugs</li> <li>-diet pills</li> <li>-fads (7, 8, 9, 10, 12, 13)</li> <li>-overweight (8, 9, 12, 13)</li> <li>-malnutrition</li> <li>-nutrient deficiency disorders (11)</li> <li>-additives</li> </ul> | <ul style="list-style-type: none"> <li>-food and oxygen</li> <li>-food cautions</li> <li>-allergies</li> <li>-botulism (7)</li> <li>-weight control (7, 8, 10, 11, 12)</li> <li>-food preservation (11)</li> <li>-roughage value of foods</li> <li>-calorie needs (13)</li> </ul> |

| Grade                              | Basic Four                                                                                                                                   | Nutrients                                                                                                                                                                                                                                                                                          | Dental Health                      | Meals & Snacks | Problems       | Misc.                                                                                                                                                                                                                                                                                   |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|----------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| High School<br>Biology/<br>Science | importance of milk<br>empty calories<br>basic four and<br>use (14)<br>calories<br>balanced diet (16)<br>identification<br>of basic four (21) | vitamin function<br>table<br>overview<br>calories (14)<br>in-depth all<br>nutrients (15)<br>functions<br>good sources (16)<br>digestion (14,15,<br>17, 18, 20,21,22)<br>table-foods and<br>nutrient content<br>overview (18)<br>testing for<br>nutrients<br>vitamins, min-<br>erals, water<br>(21) | overview of<br>tooth decay<br>(22) |                | -bacteria (14) | facts and<br>fallacies (14)<br>heterotrophic<br>nutrition<br>food and<br>water trans-<br>portation<br>(15)<br>additives<br>(14, 16, 23)<br>nutrients in<br>blood (18)<br>placental<br>nourishment<br>in embryo (19)<br>nutrients in<br>bacteria<br>nutrients in<br>fetal growth<br>(20) |

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Reference Key for the  
Scope and Sequence Chart

1. "Food...Your Choice," National Dairy Council, 1977.
2. *Healthful Living Program*, Grades 1-8, Laidlaw Health Books.  
1976-81 State (Indiana) Adopted Textbook List.
3. *Values for Health*, Grades 1-8, Fearon Books.  
1977-82 State (Indiana) Adopted Textbook List.
4. *Health and Growth*, Grades 1-8, Scott-Foresman.  
1977-82 State (Indiana) Adopted Textbook List.
5. "Foods and Nutrition," Indiana Resource Guide, pre-ninth grade,  
1974.
6. "Foods and Nutrition," Indiana Resource Guide High School, 1972.
- 7-13. The following are the current state (Indiana) adopted high  
school health books for 1976-81:
  7. *Health and Safety for You*. McGraw-Hill.
  8. *Making Health Decisions*. Prentice-Hall.
  9. *Healthful Living in Your Environment*. Laidlaw, Pub.
  10. *Modern Health Investigations*. Houghton Mifflin Co.
  11. *Investigating Your Health*. Houghton Mifflin Co.
  12. *Modern Health*. Holt, Rinehart, and Winston.
  13. *Your Health and Safety in a Changing Environment*. Harcourt-Brace-  
Jovanovich.
- 14-23. The following are the current state (Indiana) adopted high  
school biology and science textbooks for 1976-81:
  14. *Action Biology*. Allyn and Bacon, Inc.
  15. *Biology*. Addison-Wesley Pub.



16. *Biology - an Inquiry into the Nature of Life.* Allyn and Bacon Inc.
17. *Life - a Biological Science.* Harcourt-Brace-Jovanovich.
18. *Biology - Patterns in Living Things.* Harcourt-Brace-Jovanovich.
19. *Biological Science - Molecules to Man.* Houghton Mifflin Co.
20. *The Biological Sciences.* Laidlaw Pub.
21. *Life - Activities and Explorations.* Houghton Mifflin Co.
22. *Modern Life Science.* Holt, Rinehart, and Winston, Inc.
23. *Invitations to Discovery.* Holt, Rinehart, and Winston, Inc.



Using the Scope and Sequence Chart you probably can tell what nutrition related concepts you will be covering in your classes. Take the various concepts and make plans to include them in your teaching. On the following planning sheet, complete by indicating the unit

in which the nutrition concepts are to be taught. They may be taught in a separate nutrition unit or may be taught in another unit such as one on good dental health, physical fitness, etc. Second, list the concept to be taught. This is probably found on the suggested Scope and Sequence Chart. Next you should write the behavioral objective(s) (help on writing behavioral objectives can be found in the learning module: Developing a Nutrition Project.) Fourth, you should complete the vertical section by listing the content you want to cover, then giving the learning activities you will use with the students to cover this content. Last, give the resources you need in teaching this material. A sample plan is provided for your use on page 423. Please note that this is only one concept that would be taught in the unit.

Your completed plan will be of much value to you as you prepare to teach nutrition in your classroom. It is suggested that plans such as this be developed for all of the nutrition related concepts you wish to cover in your classes.



# SAMPLE

## PLANNING SHEET

Nutrition Unit Title Growing with the Basic Four Grade Level Third

Concept: Foods in the Basic Four Food Groups

- Behavioral Objectives:
1. Given pictures of different foods, the student will identify the food group of that food.
  2. Given foods of the different food groups, the student will taste foods from all four food groups.

| CONTENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | LEARNING ACTIVITIES                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | RESOURCES                                                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>423</p> <ol style="list-style-type: none"> <li>1. There are four food groups:               <ol style="list-style-type: none"> <li>a. fruit and vegetables</li> <li>b. bread and cereal</li> <li>c. meat</li> <li>d. milk</li> </ol> </li> <li>2. Oranges, bananas, tomatoes, beans and corn are examples of foods from the fruit and vegetable group.</li> <li>3. Bread, cereal, rice, cornbread, pancakes and macaroni are examples of foods from the bread and cereal group.</li> </ol> | <ol style="list-style-type: none"> <li>1. Read pages 112-115 in the text.</li> <li>2. Show pictures of different foods to the class and have students identify the food group of each food.</li> <li>3. Write the names of the foods you like best on a piece of paper. Identify a food group for each food.</li> <li>4. Write a poem or story about your favorite food for language arts class.</li> <li>5. Draw/color pictures of your favorite foods for the art lesson.</li> </ol> | <ol style="list-style-type: none"> <li>1. <i>Your Health and You</i>. Laidlow Health Books.</li> <li>2. Pictures of food. Dairy Council or collect your own.</li> </ol> |

| CONTENT                                                                                                                                                                                                                                                            | LEARNING ACTIVITIES                                                                                                                                                                                                       | RESOURCES                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| <p>4. Chicken, ham, eggs, steak, peanut butter and fish are examples of foods from the meat group.</p> <p>5. Milk, ice cream, cheese and pudding are examples of foods from the milk group.</p> <p>6. The foods from each food group have a distinctive taste.</p> | <p>6. Complete a word find for foods in different food groups.</p> <p>7. Identify food groups of foods eaten at lunch and/or at home. (If ethnic groups are in your class, make special note of types of foods eaten)</p> | <p>3. Teacher made word finds if none are available.</p> |
| <p>Note: These activities are only suggestions. It is not necessary to do all of them to achieve the objectives. You can select or modify those which would be most beneficial to your students.</p>                                                               |                                                                                                                                                                                                                           |                                                          |



SAMPLE  
PLANNING SHEET

Nutriton Unit Title \_\_\_\_\_ Grade Level \_\_\_\_\_

Concept:

Behavioral Objectives

| CONTENT | LEARNING ACTIVITIES | RESOURCES |
|---------|---------------------|-----------|
| 509     |                     | 510       |



**related annotated  
bibliography**



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## RESOURCE MATERIALS

Chevron Chemical Co.  
P.O. Box 3744  
San Francisco, CA 94119

State of Florida  
Department of Citrus  
Florida Citrus Commission  
P.O. Box 148  
Lakeland, Florida 33802

Campbell Soup Company  
Home Economics Dept.  
Educational Services Box 56-A  
Campbell Place  
Camden, New Jersey 08101

Ball Corporation  
Consumer Products Division  
1509 S. Macedonia Ave.  
Muncie, IN 47302

Marsh Supermarkets  
Yorktown, IN 47396  
Louise Estep  
Personnel Dept.  
747-7240

National Livestock and Meat Board  
444 N. Michigan Ave.  
Chicago, Ill. 60611

Del Monte Corp.  
P.O. Box 3575  
San Francisco, CA 94119

Sunkist Growers  
P.O. Box 7888  
Van Nuys, CA 91409

Pepperidge Farms, Inc.  
Norwalk, CN 06856

Castle and Cooke, Inc.  
P.O. Box 5130  
San Jose, CA 95150

Pet, Inc.  
Grocery Products Division  
Office of Consumer Affairs  
Pet Plaza, 400 S. 4th St.  
St. Louis, MO 63166

Professional Services Division  
2150 Sunnybrook Dr.  
Cincinnati, Ohio 45237

Sugar Assoc. Inc.  
1511 K Street N.W.  
Washington, D. C. 20005

Indiana State Board of Health  
1330 W. M 1 Street  
P.O. Box 1964  
Indianapolis, IN, 46206

Lea and Perrins, Inc.  
Pollitt Drive  
Fair Lawn, New Jersey 07410

The Grand Union Company  
100 Broadway  
Elmwood, New Jersey 07407

National Peanut Council  
Communication Division  
One Illinois Center  
111 E. Wacker Drive  
Chicago, Illinois 60601

Tea Council of the USA, Inc.  
230 Park Avenue  
New York, New York 10017

Indiana State Poultry Assoc., Inc.  
Poultry Science Building  
Purdue University  
West Lafayette, IN 47907

Institute of Food Technologists  
Suite 2120  
221 N. LaSalle Street  
Chicago, Illinois 60601

Columbia Information Service  
140 East 57th Street  
New York, New York 10022

Pantry Pride Supermarkets  
Dept. of Consumer Affairs  
3175 John F. Kennedy Blvd.  
Philadelphia, PA 19104

Hershey Foods Corp.  
19. E. Chocolate Ave.  
Hershey, PA 17033

Washington Apple Commission  
P.O. Box 18  
Wenatchee, WA 98801

Kellogg's  
Battle Creek, MI 49016

Lawry's Foods, Inc.  
568 San Fernando Road  
Los Angeles, CA 90065

American Cancer Society  
Indiana Division, Inc.  
2702 East 55th Place  
Indianapolis, Indiana 46220

Morton Salt Co.  
110 N. Wacker Drive  
Chicago, Ill. 60606

Diamond Walnut Kitchen  
Suite 2004  
601 California Street  
San Francisco, CA 94108

Los Angeles District  
California Dietetic Association  
P.O. Box 3506  
Santa Monica, CA 90403

Oral-B Co.  
Division of Cooper Laboratories, Inc.  
1259 Route 46  
Parsippany, New Jersey 07054

California Tree Fruit Agreement  
P.O. Box 255383  
Sacramento, CA 95825

Grower-Shipper Vegetable Association  
of Central California  
512 Pajaro St. P.O. Box 828  
Salinas, California 93902

Oster Corp.  
5055 N. Lydell Avenue  
Milwaukee, WI 53217

Pillsbury Company  
608 Second Avenue South  
Minneapolis, MN 55402

Consumer's Affairs Dept.  
The Stop and Shop Co., Inc.  
P.O. Box 369  
Boston, MA 02101

National Pork Producers Council  
4715 Grand Avenue  
Des Moines, Iowa 50312

Carnation  
5045 Wilshire Blvd.  
Los Angeles, CA 90036

LIST OF  
FREE OR INEXPENSIVE RESOURCES

ANIMAL EXPERIMENTS

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ANIMAL FEEDING DEMONSTRATIONS FOR THE CLASSROOM. National Dairy Council. (B050 \$.50)

ATHLETES' DIET

A BOY AND HIS PHYSIQUE, By Walter Gregg. (Booklet) National Dairy Council. (\$.35)

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DON'T LET YOUR DIET GET YOU DOWN: A GUIDE FOR HIGH SCHOOL ATHLETES. (Flyer) AG Publications Office, Cooperative Extension Service, University of Illinois. (1044 \$.10)

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A SOURCE BOOK ON FOOD PRACTICES: WITH EMPHASIS ON CHILDREN AND ADOLESCENTS. (Booklet) National Dairy Council (\$.40)

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MATERNAL, FETAL AND INFANT NUTRITION 1973. Hearings before the Select Committee on Nutrition and Human Needs of the U.S. Senate Part I - Consequences of Malnutrition. Superintendent of Documents Stock No. (052-070-01998-1 \$1.40).

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CONFECTIONS AND SOFT DRINKS IN SCHOOL. (Policy Statement) American Medical Association.

CONSEQUENCES OF MALNUTRITION. Hearings before U. S. Senate Select Committee on Nutrition. U. S. Government Printing Office. (052-070-1998-1, \$1.40)

DO FAT BABIES BECOME FAT ADULTS? Beech-Nut Company. (101, Free)

FIVE BABY FEEDING MYTHS. Beech-Nut Company. (102, Free)

MOTHERS WANT TO HELP. (Booklet) American Dental Association.

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## COLORING BOOKS

DAN AND SUE MEET THE BREAD AND CEREAL FAMILY. Superintendent of Documents (0124-0158 \$7.00)

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## DENTAL HEALTH

ARE YOU SELLING TOOTH DECAY? (Flyer) American Dental Association. (\$4.70/100)

BREAK THE CHAIN OF TOOTH DECAY. (Flyer) American Dental Association. (\$3.10/25)

DIET AND DENTAL HEALTH. (Booklet). American Dental Association. (\$3.20/25)

DENTAL CARIES AND A CONSIDERATION OF THE ROLE OF DIET IN PREVENTION. Policy Statement of American Academy of Pediatrics, (\$2.00)

FLUORIDATION OF PUBLIC WATER. Policy statement of American Medical Association.

FLUORIDE AS A NUTRIENT. Policy Statement of Amerocam Academy of Pediatrics. (\$2.00)

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KICK THE SWEET SNACK HABIT. (Flyer) American Dental Association. (\$2.90/100)

NURSING BOTTLE MOUTH. (Booklet) American Dental Association.

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CHOOSING FOODS TO FIT YOUR LIFE (Flyer) The Nutrition Foundation.

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FOOD NEWS: IT'S HOW YOU EAT THAT COUNTS IN THE NUTRITION RACE. (Reprint) National Dairy Council (B309F)



General Nutrition, Cont.

- FOOD: WHAT FOR? NUTRITION FOR TEENAGERS. (Booklet) Cornell University (\$1.00)
- HAMBURGER, NUTRIENTS, ELEMENTS, CELLS, BODY PARTS, YOU. (Poster)
- HOW DO YOU SCORE ON NUTRITION? (Flyer) Vitamin Information Bureau (\$.05)
- HOW TO RATE A MEAL (NUTRITIONALLY SPEAKING) (Reprint) Kraft Foods.
- HOW YOUR BODY USES FOOD, BY Albert Piltz, Ph.D. (Book)
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Order Section, CAT 75  
211 East Chicago Avenue  
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535 North Dearborn Street  
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351 Education Building  
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